The Journal
OF THE KANSAS MEDICAL SOCIETY

In This Issue

CONGENITAL TOXOPLASMOSIS: A CASE IN KANSAS —Frances Ann Allen, M.D., Newton, Kansas . Page 577

GLOMUS JUGULARE TUMOR—David M.Gibson, M.D., and G. O'Neil Proud, M.D., Kansas City, Kansas . . . . . Page 581

FURTHER STUDIES OF THE GEOGRAPHY OF HISTOPLASMIN SENSITIVITY IN KANSAS AND MISSOURI—Michael L. Furcolow, M.D., Kansas City, Kansas, and Jay Sitterley, M.D., Topeka, Kansas . Page 584

THE ROLE OF THYROID FEEDDINGS IN PREGNANCY —Lucien R. Pyle, M.D., Topeka, Kansas . Page 589

COMPLETE TABLE OF CONTENTS . . . Page IV

STORMONT MEDICAL LIBRARY
TOPEKA, KANSAS

December, 1951 Vol. LII, No. 12

DEC 21 1951

Rapid Clinical Response

with

Chloromycetin®

MEANS EARLY RETURN TO NORMAL ACTIVITIES

Continuity of treatment with well-tolerated CHLOROMYCETIN produces a rapid clinical response in a wide variety of bacterial, viral, and rickettsial diseases. Convalescence is smooth, and an early return of the patient to his normal activities may be anticipated.

CHLOROMYCETIN (chloramphenicol, Parke-Davis)
is supplied in the following forms:

CHLOROMYCETIN Kapseals,® 250 mg., bottles of 16 and 100.
CHLOROMYCETIN Capsules, 100 mg., bottles of 25 and 100.
CHLOROMYCETIN Capsules, 50 mg., bottles of 25 and 100.
CHLOROMYCETIN Ophthalmic Ointment, 1%, ⅛ ounce collapsible tubes.
CHLOROMYCETIN Ophthalmic, 25 mg. dry powder for solution, individual vials with droppers.

MEDICAMENTA VERA · PD & CO.

TABLE OF CONTENTS

DECEMBER, 1951

ORIGINAL ARTICLES

Congenital Toxoplasmosis: A Case in Kansas — Frances Ann Allen, M.D., Newton, Kansas 577

Glomus Jugulare Tumor — David M. Gibson, M.D., and G. O'Neil Proud, M.D., Kansas City, Kansas 581

Further Studies of the Geography of Histoplasmin Sensitivity in Kansas and Missouri — Michael L. Furcolow, M.D., Kansas City, Kansas, and Jay Sitterley, M.D., Topeka, Kansas 584

The Role of Thyroid Feedings in Pregnancy — Lucien R. Pyle, M.D., Topeka, Kansas 589

EDITORIALS

Dr. Croson Memorial 599

Dues for 1952 599

American Medical Education Foundation .. 600

Don't Give Your Life for Christmas 601

Improving Physician - Patient Relationship 602

MISCELLANEOUS

President's Page 598

Case Report from the University of Kansas Medical Center 605

Senior Thesis from the University of Kansas Medical School 612

Entered as second-class matter, May 2, 1914, at the Postoffice at Topeka, Kansas, under the Act of March 3, 1879. Accepted for mailing at special rate of postage provided for in Section 1103, October 3, 1917. Authorized on July 2, 1918.

THE JOURNAL OF THE KANSAS MEDICAL SOCIETY

EDITORIAL BOARD

LUCIEN R. PYLE, M.D., Editor, Topeka

ORVILLE R. CLARK, M.D., Topeka

JOHN W. CAVANAUGH, M.D., Topeka

DWIGHT LAWSON, M.D., Topeka

RICHARD GREER, M.D., Topeka

ASSOCIATE EDITORS

DONALD P. TREES, M.D., Wichita

GLEN R. SHEPHERD, M.D., Kansas City

INFORMATION

Ownership: The Journal is a non-profit publication owned and published monthly by The Kansas Medical Society.

Subscription: Membership in The Kansas Medical Society includes subscription to The Journal. Rates to others, except in foreign countries, are $4.00 per year or 60c per copy.

Material: Scientific articles, editorials, and data of general interest are invited from all members. Articles are to be submitted on condition that they are contributed solely to this publication. A right is reserved to reject any material deemed unsatisfactory.

Manuscripts: Only manuscripts that are typewritten on one side, double spaced, and original copies can be accepted. Manuscripts will be returned upon request.

Advertising: All advertising contracts, and all copy from advertisers under contract are subject to approval of the editorial board. Copy should be received by the 20th of each month to insure publication.

Reprints: Actual cost prices for reprints will be quoted upon request. Reprints should be ordered promptly after publication or forms may not be available.

Non-Responsibility: Although an effort is made to publish only accurate articles and legitimate advertisements the Journal denies legal responsibility for any statements, opinions, or advertisements appearing under the names of contributors or concerns.

PAULINE FARRELL, Managing Editor and Advertising Manager

OLIVER E. EBEL, Business Manager

Publication Office: 512 New England Building, Topeka

NORM

Normal schedule of development (auxodrome) plotted on Wetzel Grid.[1]

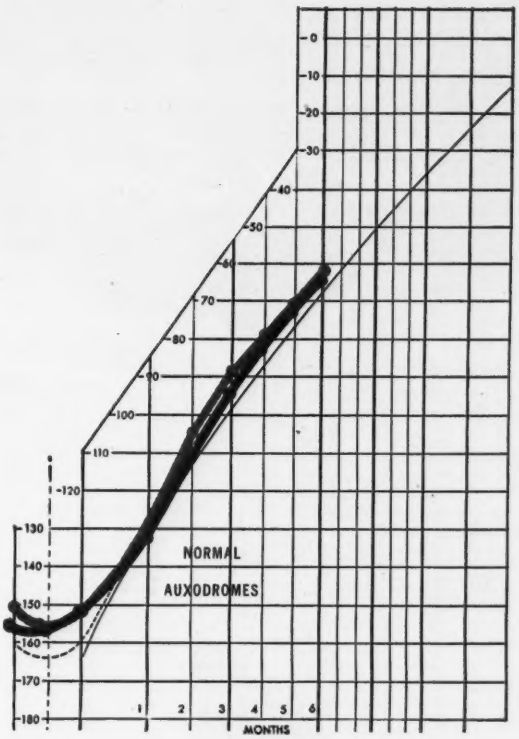
CURVE A

Composite Wetzel Grid auxodrome of 60 unselected infants on S-M-A from birth to 6 months of age.

CURVE B

Growth data, recomputed on Wetzel Grid, based on "selected subjects, most of whom were favored by environment;"[2] age: from birth to 6 months.

1. Wetzel, N. C.: J. Pediat. *29*:439, 1946.
2. Jackson, R. L., and Kelly, H. G.: J. Pediat. *27*:215, 1945.



Comparative development rates prove...

S-M-A®

builds husky babies

Recent clinical studies of development rates of *unselected* S-M-A-fed babies (curve A on chart) prove its value. The growth results compare favorably with "standards which are considered to approach the optimum for general pediatric practice."[2] (curve B on chart).

Because it is patterned after human milk **S-M-A®** with Vitamin C added *is recognized as an outstanding food for babies.*

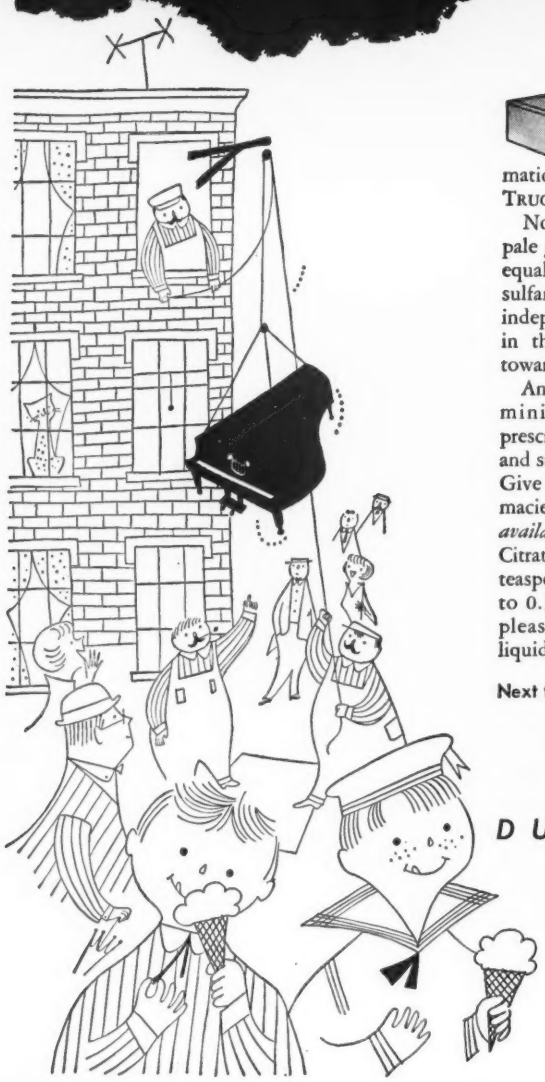
Wyeth Incorporated, Philadelphia 2, Pa.

Wyeth®

nothing competes with the *Lure of Sweets . . .*

now you can use it in

triple sulfonamide therapy



From problem child to model patient—that's the pleasant transformation when you prescribe new, candy-like TRUOZINE *Dulcet* Tablets.

No reminder of bad tasting medicine in these pale green, good-tasting cubes. Yet it's there—equal parts of sulfadiazine, sulfamerazine and sulfamethazine, These combined drugs, being independently soluble in the urine, can be given in therapeutic dosage with far less tendency toward crystalluria than with single sulfonamides.

And TRUOZINE *Dulcet* tablets are easy to administer. Mother merely counts out the prescribed number of cubes. Uniform potency and stability assure exact dosage. See for yourself. Give TRUOZINE *Dulcet* tablets a trial. At pharmacies in bottles of 100, 0.3-Gm. tablets. *Also available:* TRUOZINE Suspension with Sodium Citrate. Supplies 1.5 Gm. sodium citrate per teaspoonful, as a built-in alkalinizer, in addition to 0.3 Gm. of combined sulfonamides. This pleasant tasting, non-settling liquid is supplied in pint bottles. Abbott

Next time, specify

truozine
TRADE MARK

DULCET® TABLETS

(METH-DIA-MER-SULFONAMIDES, ABBOTT)

physiologic "booster" to counter stress

In situations of bodily stress, endogenous output of adrenal cortical hormones often proves unequal to surging physiologic need. Adrenal cortical function warrants therapeutic support in patients with severe burns or infections as well as in medical and surgical convalescence complicated by adrenal insufficiency. For an exogenous "booster" source to help meet the demands of such stressful states . . .

℞ *Upjohn Adrenal Cortex Extract*

10 cc. and 50 cc. vials of sterile solution for subcutaneous, intramuscular, or intravenous injection.

The potency, purity and standardized metabolic range of this and other products are pioneering contributions to medical practice from Upjohn research in adrenal physiology and in the elaboration of extracts providing *all* the vital adrenal cortical hormones.

Each cc. of Upjohn Adrenal Cortex Extract contains the biological activity equivalent of 0.1 mg. of 17-hydroxycorticosterone, as standardized by the Rat Liver-Glycogen Deposition test. Alcohol 10%.

a product of

Upjohn Research

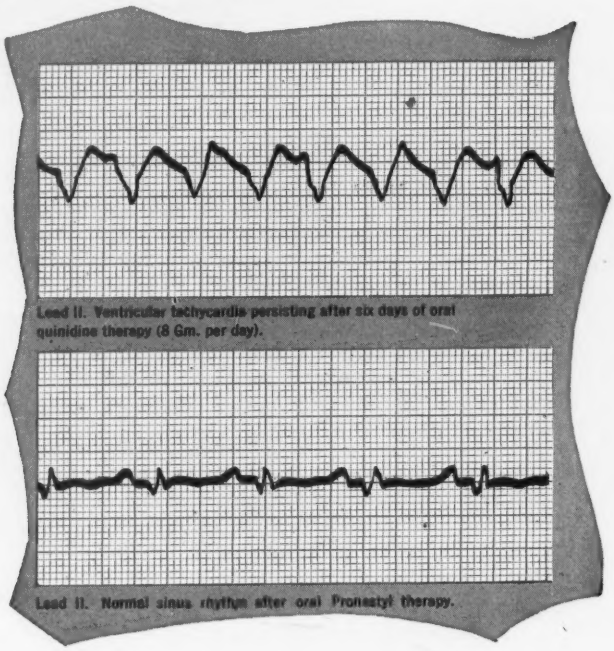
for Medicine . . . Produced with care . . . Designed for health

THE UPJOHN COMPANY KALAMAZOO, MICHIGAN

a new drug . . .
for the treatment of ventricular arrhythmias

PRONESTYL *Hydrochloride*

Squibb Procaine Amide Hydrochloride



Lead II. Ventricular tachycardia persisting after six days of oral quinidine therapy (8 Gm. per day).

Lead II. Normal sinus rhythm after oral Pronestyl therapy.

Oral administration of Pronestyl is indicated in ventricular tachycardia and runs of ventricular extrasystoles. Intravenous administration is sometimes used in ventricular tachycardia and to correct ventricular arrhythmias during anesthesia. For detailed information on dosage and administration, write for literature or ask your Squibb Professional Service Representative.

PRONESTYL IS A TRADEMARK OF E. R. SQUIBB & SONS

Pronestyl Hydrochloride Capsules, 0.25 Gm., bottles of 100 and 1000.
Pronestyl Hydrochloride Solution, 100 mg. per cc., 10 cc. vials.

SQUIBB MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858.

FUNCTIONAL NERVOUS DISORDERS

IN *Visceroptotic Patients*

Pressure variations induced by movements of the diaphragm are in part responsible for the venous return to the heart. Highly sensitive nervous connections are influenced by its positions. "Globus Hystericus" is seldom manifest in functional visceroptotic patients when reclining. Sudden dropping of the viscera such as occurs upon arising in the morning initiates symptoms. Tension on the diaphragm irritates sympathetic connections, thereby lowering vasmotor tone. "The globus is almost invariably relieved by abdominal support and systematic breathing exercises to release diaphragmatic tension."*

**Gosselin, George A., M.D.*
Neurology and Physiology in Functional States
Connecticut State Medical Journal
15: 109-113, (February) 1951

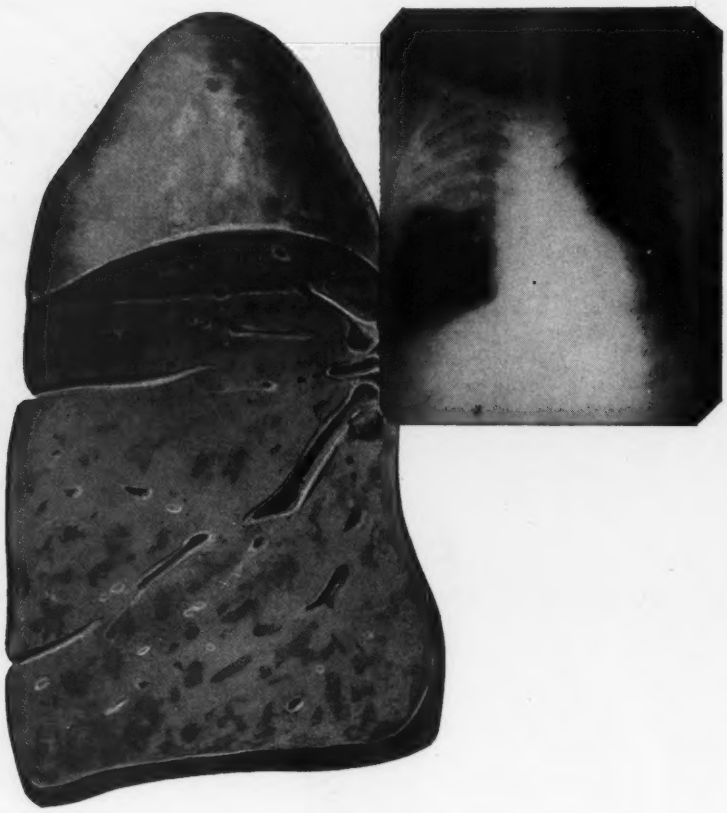
CAMP

Visceroptosis Supports, scientifically designed, universally distributed. Prescribed by physicians and praised by the patients who wear them.

S. H. CAMP and COMPANY, JACKSON, MICHIGAN

World's Largest Manufacturers of Scientific Supports

Offices in New York • Chicago • Windsor, Ontario • London, England



in lobar pneumonia: The prompt response to Terramycin therapy in lobar pneumonia is consistent with results obtained in primary atypical pneumonia, bronchopneumonia and many other infections of the respiratory tract. In a typical series of pediatric cases, Terramycin-treated, "temperatures returned to normal in 24 to 48 hours after therapy was begun. The clinical appearance of marked improvement took place during the same period."

Potterfield, T. G., and Starkweather, O. A.: J. Philadelphia General Hosp. 2:6 (Jan.) 1951

CRYSTALLINE TERRAMYCIN HYDROCHLORIDE

available | *Capsules, Elixir, Oral Drops, Intravenous, Ophthalmic Ointment, Ophthalmic Solution.*

ANTIBIOTIC DIVISION Pfizer CHAS. PFIZER & CO., INC., *Brooklyn 6, N. Y*

Cortone®

most effective and practical therapy in Rheumatoid Arthritis

INCREASING supplies of CORTONE* now offer many physicians their first opportunity to prescribe this dramatically effective hormone.

Extensive evidence based on three years' clinical experience has shown that CORTONE controls both objective and subjective manifestations of rheumatoid arthritis in virtually all cases; in many of these patients, CORTONE has been used for prolonged periods of time.

It is reassuring to note also that the administration of CORTONE does not necessitate any measures that are not readily available to the physician in everyday practice. The use of simple laboratory tests (sedimentation rate, urinalysis, blood count, blood pressure, and recordings of weight), individualized adjustment of dosage, and careful clinical observation will permit most patients to benefit materially . . . without fear of undesired effects.

CORTONE PRODUCT FORMS:

ORAL—Cortone Acetate Tablets, 25 mg. each, bottles of 40 tablets.

PARENTERAL—Cortone Acetate, Saline Suspension for injection, vials of 20 cc., each cc. containing 25 mg.

Literature on Request

Cortone®
ACETATE
(CORTISONE Acetate Merck)

**MERCK & CO., INC.*
Manufacturing Chemists
RAHWAY, NEW JERSEY
In Canada: MERCK & CO. Limited—Montreal

**CORTONE is the registered trade-mark of Merck & Co., Inc. for its brand of cortisone.*

50 and Five

YEARS TREATING ALCOHOL AND DRUG ADDICTION

In 1897 Doctor B. B. Ralph developed methods of treating alcohol and narcotic addiction that, by the standards of the time, were conspicuous for success.

Twenty-five years ago experience had bettered the methods. Today with the advantages of collateral medicine, treatment is markedly further improved.

The Ralph Sanitarium provides personalized care in a quiet, homelike atmosphere. Dietetics, hydrotherapy and massage speed physical and emotional re-education. Cooperation with referring physicians. Write or phone.

The

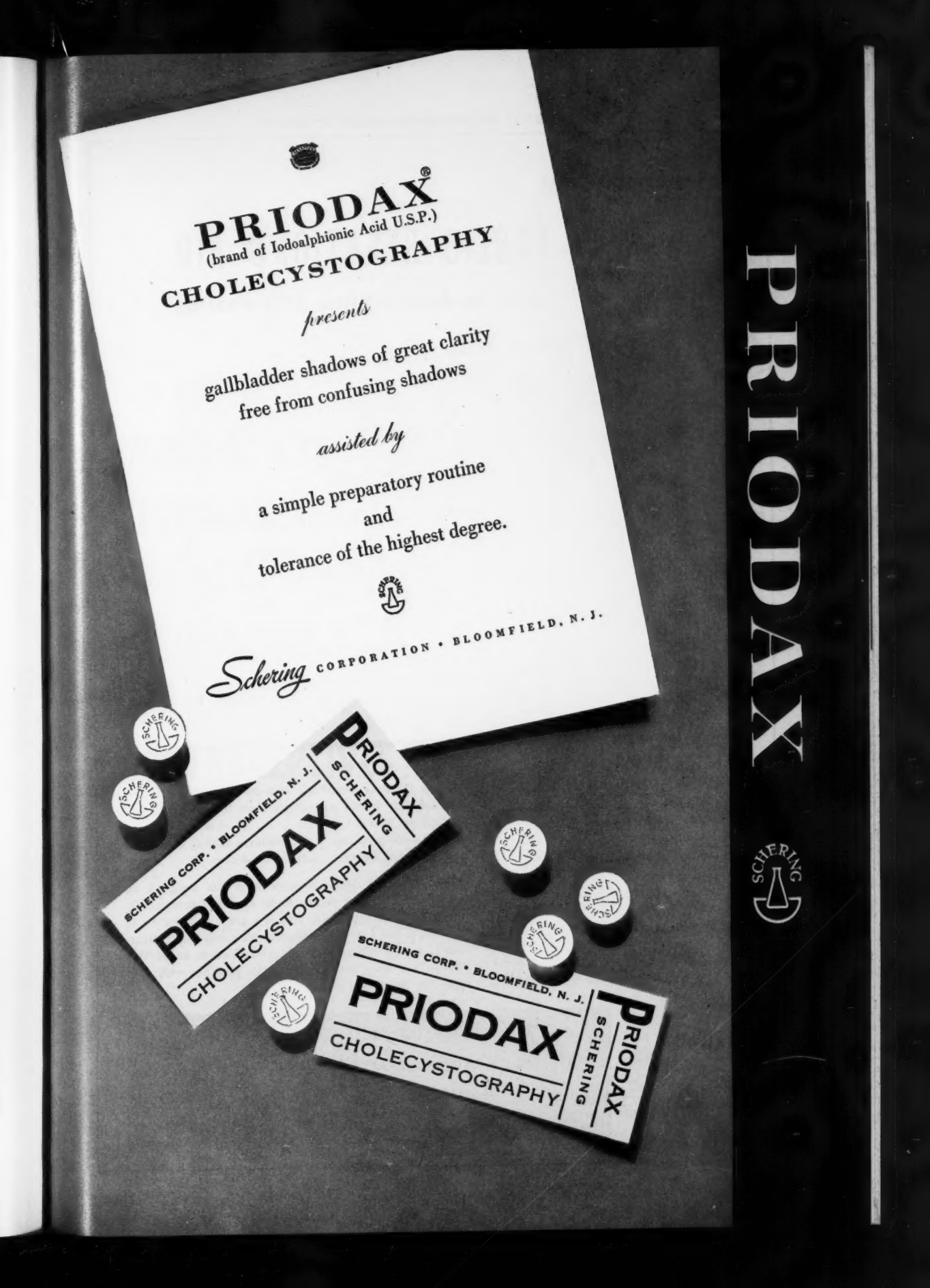
RALPH SANITARIUM

Established 1897

Ralph Emerson Duncan, M.D.
DIRECTOR

529 HIGHLAND AVENUE • KANSAS CITY 6, MISSOURI

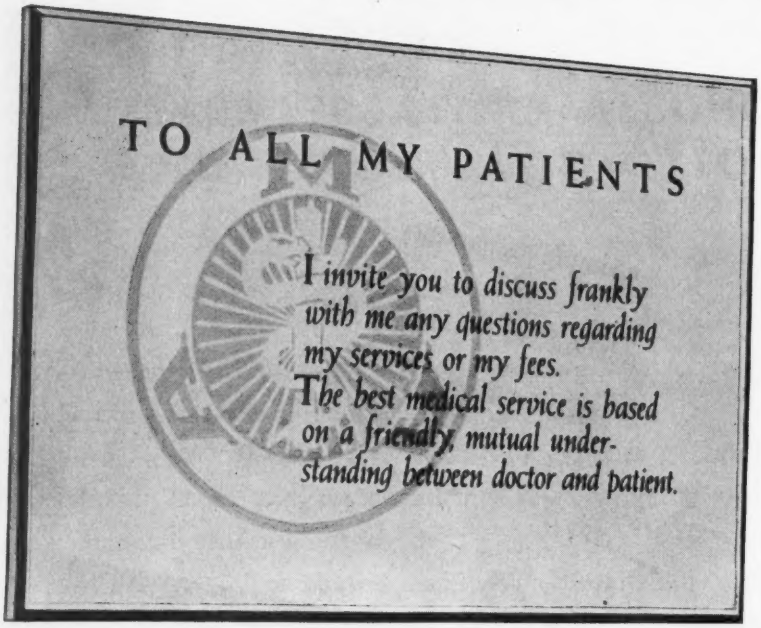
Telephone VIctor 3624


PRIODAX®
(brand of Iodoalphionic Acid U.S.P.)
CHOLECYSTOGRAPHY
presents
gallbladder shadows of great clarity
free from confusing shadows
assisted by
a simple preparatory routine
and
tolerance of the highest degree.
Schering CORPORATION • BLOOMFIELD, N. J.
SCHERING CORP. • BLOOMFIELD, N. J.
PRIODAX
CHOLECYSTOGRAPHY
PRIODAX
SCHERING
SCHERING CORP. • BLOOMFIELD, N. J.
PRIODAX
CHOLECYSTOGRAPHY
PRIODAX
SCHERING
PRIODAX
SCHERING

announcing

A NEW PUBLIC RELATIONS AID

. . . to boost your PR rating


TO ALL MY PATIENTS
I invite you to discuss frankly with me any questions regarding my services or my fees.
The best medical service is based on a friendly, mutual understanding between doctor and patient.

NEW OFFICE PLAQUE

- ✓ **dark brown lettering on buff**
- ✓ **harmonizes with any office decor**
- ✓ **measures 11½ by 7¾ inches**
- ✓ **for desk or wall**
- ✓ **laminated plastic finish**

As you know, a physician's best public relations is carried on right in his own office. Here the physician gets acquainted with his patients . . . gives them a chance to talk over problems . . . builds a feeling of mutual understanding between patient and doctor.

Your American Medical Association has designed an attractive new office plaque to be displayed prominently on an office desk or wall. This is a graphic invitation to patients to talk over professional services and fees. Patients like to ask questions, but often are hesitant to do so. This plaque will open the door to better relations with your patients. Order one today.

PRICE
$1
POSTPAID

Order Department
AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street
Chicago 10, Illinois

You may prescribe "RAMSES"† Vaginal Jelly with full confidence in its safety and effectiveness. No vaginal jelly available provides a greater degree of spermicidal or barrier action than does "RAMSES" Vaginal Jelly.

IMMOBILIZES SPERM IN THE *FASTEST TIME* RECOGNIZED FOR CHEMICAL CONTRACEPTIVES ❋

❋ This immobilization time is measured by the Brown and Gamble technique, the only method accepted by the Advisory Committee on Contraceptives of the Council on Pharmacy and Chemistry of the American Medical Association for determining the sperm immobilization time of chemical contraceptives.

gynecological division

Julius Schmid, Inc.

423 West 55th Street, New York 19, N. Y.

quality first since 1883

†The word "RAMSES" is a registered trademark of Julius Schmid, Inc.

Merry Christmas!

One could not be more sincere when we extend to you the Season's Greetings.

Gratefully and from the bottom of our hearts, we wish you a most pleasant Holiday Season.

May Peace, Joy, and Happiness always be yours, and may we always consider you our very best friends!

Sincerely yours,

Quinton-Duffens
INDEPENDENT
OPTICAL COMPANY

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE ANNOUNCES

Postgraduate Course in Pediatrics
January 28-30, 1952

Guest Faculty:

LUCIUS E. ECKLES, M.D., Pediatrician, Topeka, Kansas.

PAUL A. HARPER, M.D., Professor of Maternal and Child Health, School of Hygiene and Public Health, The Johns Hopkins University, Baltimore, Maryland.

ARILD E. HANSEN, M.D., Professor of Pediatrics, The University of Texas School of Medicine, Galveston.

LEE FORREST HILL, M.D., Pediatrician, Des Moines, Iowa; Past-president of American Academy of Pediatrics.

University of Kansas Faculty:

THOMAS N. HALL, M.D., Assistant Professor of Pediatrics.

EDWARD T. HASLAM, M.D., Instructor in Surgery.

PAUL C. LAYBOURNE, JR., M.D., Assistant Professor of Psychiatry & Neurology and Pediatrics.

ALBERT N. LEMOINE, JR., M.D., Associate Professor of Ophthalmology.

PAUL H. LORHAN, M.D., Clinical Professor of Surgery (Anesthesiology).

GEOFFREY M. MARTIN, M.D., Lecturer in Pediatrics and Public Health; Director, Division of Maternal & Child Health, Kansas State Board of Health.

C. ARDEN MILLER, M.D., Instructor in Pediatrics.

HERBERT C. MILLER, M.D., Professor of Pediatrics and Chairman of the Department.

JUNE MILLER, M.A., Associate Professor of Hearing and Speech.

G. O'NEIL PROUD, M.D., Associate Professor of Otorhinolaryngology.

HERBERT A. WENNER, M.D., Research Professor of Pediatrics.

WILLIAM P. WILLIAMSON, M.D., Associate Professor of Surgery.

Postgraduate courses in

Medical Technology

(For both Registered Technicians and others serving in medical laboratories)

January 14, 15 & 16, 1952

Nursing

February 11, 12 & 13, 1952

Radiology

February 25, 26 & 27, 1952

For copy of program announcement, address:

Extension Program in Medicine

University of Kansas Medical Center

Kansas City 12, Kansas

Safety first for infant feeding

PAGE EVAPORATED MILK

400 USP Units Vitamin D Added

All along the production line, from the cow in the pasture to the grocery store, Page milk is doubly safeguarded against contamination. Page Evaporated Milk is produced on farms which are exclusively Page shippers, where we can keep close control over herd inspection, milking methods and equipment. Our minimum standards are high. Cows must be clean, milk must be quickly cooled and kept at proper temperature. When milk is received at the plant, it is examined for freshness, a bacteria count is taken, the milk is concentrated, canned and *sterilized after sealing.*

Page Evaporated Milk is always superior quality, homogenized and vitamin D increased. You can recommend it with confidence.

ACCEPTED
COUNCIL ON FOODS AND NUTRITION
AMERICAN MEDICAL ASSOCIATION

ONLY THE BEST FARMS CAN QUALIFY AS PAGE PRODUCERS

THE PAGE MILK COMPANY
COFFEYVILLE, KANSAS
General Offices: Merrill, Wisconsin

It Is Convenient to Buy Kanox

THERAPEUTIC OXYGEN AND ANESTHETIC GASES

Oxygen Therapy
Regulators and Equipment
Repair Service for
Regulators, Flowmeters
and Humidifiers

Nitrous Oxide
Ethylene
Carbon Dioxide
Helium
Oxygen
Cyclopropane

KANSAS OXYGEN

Phone 6392 HUTCHINSON, KANSAS Box 551

THE MAJOR CLINIC ASSOCIATION

3100 EUCLID AVENUE KANSAS CITY, MISSOURI

A Well Equipped Institution for the Nervous and Mental Diseases and Alcohol Drug and Tobacco Addictions

Beautiful Location Large, Well Shaded Grounds Spacious Porches, All Modern Methods for Restoring Patients to a Normal Condition

Elderly People Accepted — Special Rates

HERMON S. MAJOR, M.D.
Medical Director

HERMON S. MAJOR, JR.
Business Manager

The final question

for any antiseptic—

—"What is its practical effectiveness when applied to human skin?"
MERTHIOLATE (Thimerosal, *Lilly*) has long been known to provide antiseptic protection in actual use. Recent studies confirm that 'Merthiolate' remains unaltered in effectiveness on the skin for long periods of time—an important reason why 'Merthiolate' has withstood the practical test of widespread use.

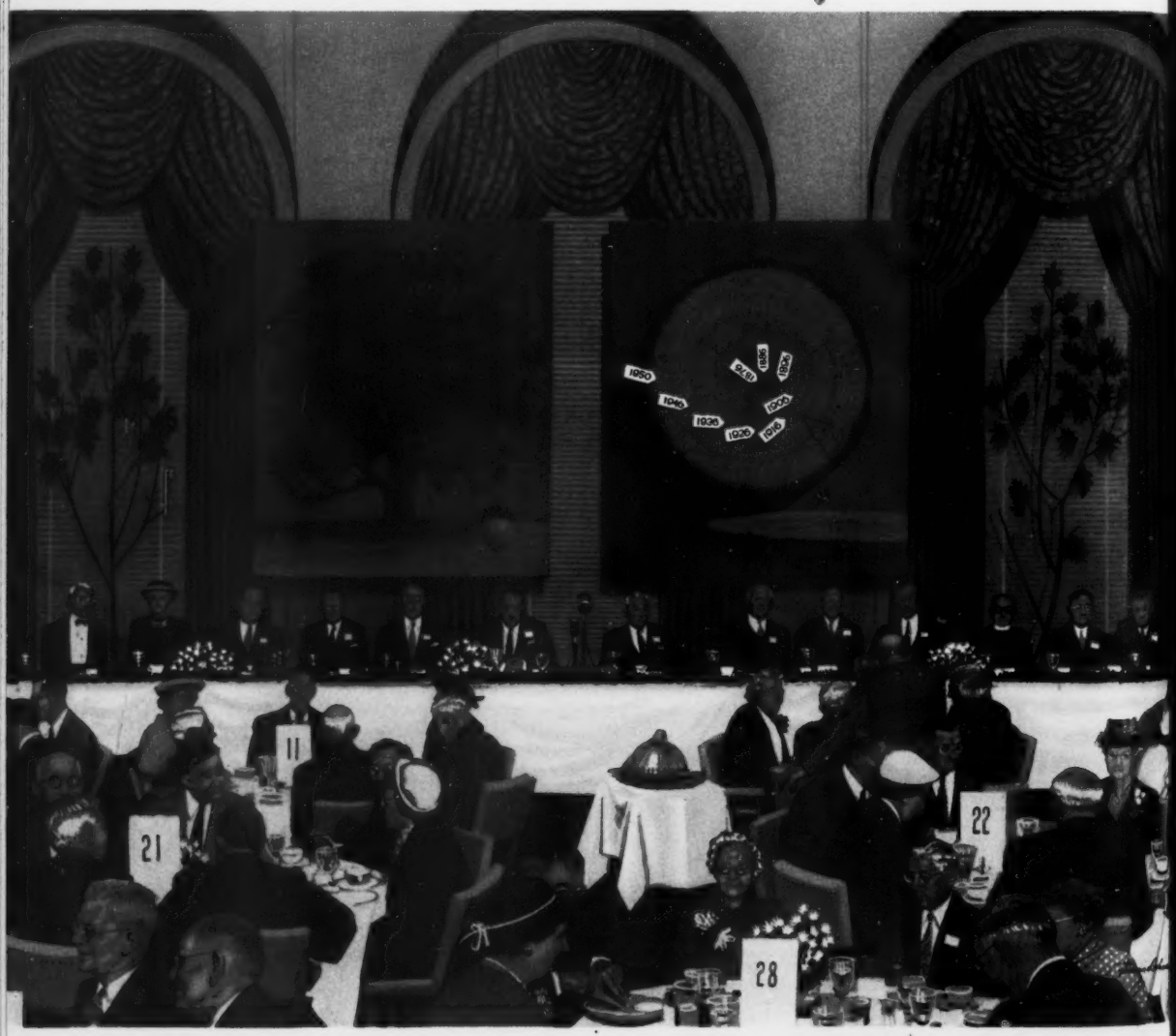
Detailed information and literature on 'Merthiolate' are personally supplied by your Lilly medical service representative or may be obtained by writing to Eli Lilly and Company, Indianapolis 6, Indiana, U.S.A.

Lilly
SINCE 1876

LILLY SINCE 1876

Is There Anything Unusual about This Scene?

If you could actually see these people who attend the annual banquet in honor of their long service, we believe you would observe even more than a group of happy, friendly people. From something in their manner, you would sense the quiet inner-assurance so typical of older Lilly employees. Because Eli Lilly and Company has always kept faith with its commitments to them, they have confidence in the company, in their work, and in themselves. In turn, these qualities have helped build the kind of company which others also trust.



Lilly

ELI LILLY AND COMPANY · INDIANAPOLIS 6, INDIANA, U.S.A.

THE JOURNAL
of the
KANSAS MEDICAL SOCIETY
Owned and Published by The Kansas Medical Society

Volume LII DECEMBER, 1951 No. 12

Congenital Toxoplasmosis: A Case In Kansas

Frances Ann Allen, M.D.

Newton, Kansas

Introduction: It is perhaps of importance to report a case of toxoplasmosis infection in this area so that physicians generally may be alerted to the fact that the infecting parasite may exist endemically as an infection in the animals of this state. They may therefore form a source of potential infection to the human population of this state.

Definition: Toxoplasmosis is an infectious disease caused by protozoa of the genus Toxoplasma. It affects both lower animals and human beings. In human beings it occurs in the following three forms:

1. Congenital type—characterized by an encephalomyelitis.
2. Childhood type which is an acute non-suppurative encephalitis.
3. The adult form which is a spotted fever like syndrome associated with atypical pneumonia.

A fourth type has been suggested by Sabin. This form is without symptoms but the patient possesses antibodies against the parasite, and a woman so infected is capable of passing it to her fetus in utero.

History: As a distinct genus of protozoa, Toxoplasma has been recognized since 1909 when it was differentiated from Leishmania. Until 1939 it was thought to infect only certain species of lower animals. In 1939 Wolf, Cowen, and Paige established the existence of human infection of Toxoplasma and transmitted the infection from human to animal, then recovered the organisms from the infected animals.

Incidence: On June 25, 1948, Dr. J. K. Frenkel, Hamilton, Montana, read a paper on this subject before the Section on Pathology and Physiology at the 97th Annual Session of the A.M.A. in Chicago. He stated that about 35 cases of toxoplasmosis in human beings had been reported to date diagnosed either by autopsy or animal inoculation. Cases of chorioretinitis associated with serologic evidence of toxoplasmosis have been added to these. These cases in both human beings and animals have been reported from all over the world. Pinkerton and Weinman reported the first fatal case in an adult from Peru in 1940. In 1941 two adult fatal cases were reported in the St. Louis area. Many cases of the congenital type have been reported in the last 10 years from scattered areas all over the world.

Etiology: The disease is due to the invasion of the body by the Toxoplasma gondii organism, a highly organized protozoan parasite with distinct cytoplasm and nuclear chromatin. The organism derives its name from the Greek "toxon" meaning a bow or arc connoting the lunate shape of the organism, and the specific name gondii is derived from the name of the type host, the gondi, a small North African rodent, which was used as a laboratory animal at the Pasteur Institute. The protozoan organism reproduces by binary fission. They vary from four to seven microns in length and about two to four microns in width. When young they are crescent shaped with one end pointed and the other slightly rounded. There is no nuclear membrane, and the nuclear chromatin often constitutes about a third of the parasite. As the organism becomes mature it becomes oval or round prior to its fission.

As an aviary strain these organisms infect certain birds. The mammalian strains can infect many types of lower animals, among them dogs, cats, rats, mice, sheep and guinea pigs. Mammals may be infected by the aviary strain, but birds cannot be infected by mammalian strains. The mode of transmission is uncertain. The urine and feces of infected animals may represent a mode of transmission. Spread through mosquitoes and ticks has also been suggested as a means of transmission.

Transplacental transmission takes place when the mother has a primary infection during her pregnancy. *There is no history of a mother's transferring the disease in more than one pregnancy.* Infection prior to pregnancy does not result in transplacental transmission. Also none of the mothers giving birth to toxoplasmic infants had any sign of the disease

other than the presence of toxoplasmic antibodies in the blood. The presence of a pronounced hypersensitivity to Toxoplasma after the acute infection makes blood stream dissemination of the organism unlikely.

The parasite is an obligate intracellular organism. It is grown in vitro with great difficulty. It exhibits affinity for all types of fixed tissue cells of the reticuloendothelial system and the parenchyma of various organs.

Pathology: After entrance into the human body there is a hematogenous spread. In infants the most frequent site of symptomatic growth is in the central nervous system. In the childhood type this affinity is only slightly less evident. In adults visceral involvement is the rule, the lungs being symptomatically most affected. The parasite invades a fixed living tissue cell, multiplies until the cell membrane breaks, releasing more parasites for further invasion. In the central nervous system the parasitic invasion results in localized necrosis of brain tissue.

In the ependymal cells inflammatory exudate may result in occlusion of the ventricles with resulting internal hydrocephalus. The necrotic areas of the brain tissue subsequently calcify. In addition to necrosis there is often a diffuse inflammatory reaction consisting of mononuclear and glial cells and miliary granulomata consisting of closely arranged epithelioid cells. Free parasites are found in these inflammatory areas. The ocular pathology consists of areas of retinal degeneration and necrosis and an associated inflammatory reaction which extends to the choroid and sometimes into the vitreous. Focal lesions outside the central nervous system are found in the lungs, heart, adrenals, skeletal muscles, and subcutaneous fat. The adult form of the disease demonstrates an interstitial pneumonitis with shot-like areas of induration made up of alveolar connective tissue and alveolar lining cells, many of which contain the parasites. Focal necrosis in the liver, spleen, myocardium and brain are also frequent findings in the adult form.

Symptoms and Physical Signs: Due to the pathology described there are definite symptoms and signs resulting.

In the congenital form the signs and symptoms may be evident at birth or become evident in some months or even years after birth. Hydrocephalus or microcephalus, mental retardation, spastic paraplegia, visual difficulties due to macular chorioretinitis and x-ray evidence of intracranial calcification are all characteristic. Chorioretinitis is the most constant finding and some authors say an invariable one.

Acquired toxoplasmosis of the childhood type is characterized by a diffuse non-suppurative encephalitis with an associated mononuclear pleocytosis and markedly increased protein in the spinal fluid.

Toxoplasmosis of the adult type is ushered in by weakness and malaise for about one week followed by marked rise in temperature. A cough with clinical signs of an atypical pneumonia is followed by a diffuse red or pink maculo-papular rash of the Rocky Mountain spotted fever type. It covers the entire body except the scalp, palms of the hands and soles of the feet. X-ray does not show much evidence of pneumonitis, but dyspnea, cyanosis, rales, and unproductive cough are evident. By x-ray normal lung markings are accentuated. Death is common and occurs six to 18 days after the initial temperature rise. However, all cases do not die and it is probable that many cases of atypical pneumonia may be due to this infection.

Chorioretinitis in older children and adults has in a large number of cases been thought to be of this origin by some authors. Sabin does not adhere to this belief.

Diagnosis: Diagnosis of the disease is based upon the foregoing signs and symptoms plus:

1. The isolation of the parasite itself (this is done only at autopsy).

2. The presence of Toxoplasma neutralizing antibodies in the serum as determined by the dye test devised by Sabin and Feldman and described in *Science* for December 10, 1948.

3. The complement fixation reaction whereby existing titres were raised by antigen injections.

4. Cutaneous test with toxoplasmin (Toxoplasma antigen). This latter test is similar to the tuberculin test. By Sabin this test has been discounted as a reliable index of the existence of infection. The general population in the Cincinnati area showed as high as 65 per cent positive in the age group over 40 years. Antibody titres obtained on the positive reactors were too low to be of significance.

Differential Diagnosis: The congenital form of the disease must be differentiated from other forms of central nervous system abnormality. The syndrome of chorioretinitis with microcephalus or hydrocephalus, intracranial calcifications, mental retardation and spastic paraplegia with positive blood findings in the infant and mother make the diagnosis certain. Other forms of congenital central nervous system involvement will be lacking in several of these factors.

The childhood type of acquired toxoplasmic encephalitis can be differentiated from other forms of encephalitis only by immunologic study of antibody titre and skin and complement fixation reactions. The presence of large amounts of protein in the spinal fluid is suggestive.

The adult type must be differentiated from the

rickettsial infections with their attending rashes, red measles, infectious mononucleosis, and other atypical pneumonias. The serological antibody and skin test findings are negative for some time, but the complement fixation test is positive within about one week following onset of the illness. The typical leukocyte count of infectious mononucleosis and the heterophile antibody titre serve to differentiate it. The Weil-Felix reaction rules out the rickettsial infections (Rocky Mountain spotted fever, etc.).

Treatment: Treatment has been discouraging. Moderate benefit has been obtained with sulfapyridine, sulfadiazine and sulfamerazine given in full therapeutic doses for about two weeks. In the congenital form damage is usually so great before a diagnosis is obtained that it is of little avail.

Other drugs have been tried and found wanting. Among them are Trypaflavine, rivanol, potassium antimony tartrate, mapharsen, quinine, streptomycin, penicillin, chloromycetin, aureomycin, polymyxin, chlorguanide, subtilin, bacitracin, para amino benzoic acid, nicotinic acid, nitrofurazine.

Desensitization by graduated doses of Toxoplasma antigen supplemented by intravenous typhoid vaccine has been used with benefit in cases of chorioretinitis. This supports the idea that this is an allergic manifestation of the disease.

Case History

On September 28, 1949, a female infant, S. S. J., was born to a mother of 27 years. She was the third child. The infant weighed six pounds 15¼ ounces, was 18½ inches in length and arrived approximately two to three weeks prior to the expected confinement date. The delivery was carried out under mild Demerol and Seconal analgesia. It was a cephalic occiput anterior presentation. Breathing and crying were spontaneous and no gross anomalies were apparent. The baby showed an initial weight loss down to six pounds ¾ ounces on the third day, followed by a gain to six pounds one ounce on the fourth day when the mother took the baby home. The infant was breast fed. During these first four days in the newborn nursery the attending nurses noted twitching of the extremities on several occasions, but no rigidity or cyanosis was apparent.

The baby was seen in the clinic when one month old. Its weight had increased to eight pounds two ounces (a gain of one pound three ounces over birthweight). The height had increased to 20⅜ inches (a growth of 1⅞ inches). At the time of this visit a hemangioma of the left upper pectoral region was noted. It was of the combined superficial and deep type, and radium therapy was thought advisable. The parents were referred to a radiologist in Wichita for this treatment. The infant was seen again two weeks later at the age of six weeks and had gained to nine pounds seven ounces (one pound five ounces over preceding visit). The mother had changed from breast to bottle feeding because of inadequate milk supply. An evaporated milk formula was being given. The parents had taken the child to the radiologist and one treatment to the hemangioma had been given.

The child was seen at two months of age at which time the weight was 10 pounds 13 ounces, height 21⅞ inches. The mother stated the baby cried a great deal and had loose stools with much intestinal gas. A small umbilical hernia was noted at this time. Formula adjustment was made.

At three months of age the child was brought in, the mother stating that the child was having too many bowel movements and had a cough and fever at times. Rectal temperature was 100 degrees. No rales could be heard. Body weight was 11 pounds 14 ounces. Formula adjustment was made and antispasmodic medication prescribed.

The child was not seen again until it was four months of age, when the mother brought her in with a mild acute gastroenteritis. The child was given 200,000 units of procaine penicillin intramuscularly, kaopectate orally, and placed on boiled skim milk until the diarrhea was controlled.

The child then was not seen until three months later when she was seven months old. At that time the mother brought her in because she was failing to do the things which were normal for an infant of her age. She could not roll over or sit up. Her body weight was 15 pounds 12 ounces, height 27½ inches. At a glance it was apparent that she was microcephalic. The occipitofrontal head circumference was only 14½ inches. The child could not sit alone, the difficulty seeming to be one of weakness. No spasticity of the extremities was noted. The child was pale. Reflexes were active and normal. The mother was advised of the probable diagnosis of idiopathic microcephaly and asked to return for progressive head measurements to confirm it.

One month later (when the child was eight months of age) the head circumference had increased by ¼ inch. The child had gained 10 ounces. X-ray of the skull taken at this time showed the sutures still to be open and small intracranial calcifications were evident. Movement by the child when the picture was taken obscured good detail. When she was 9½ months old (one month later) the head circumference had not increased beyond that of the preceding month. Still no spasticity was evident. The body weight had increased to 16 pounds 14 ounces.

Five months later at the age of 15 months the child was seen again. The head circumference had increased by ½ inch, being now 15¼ inches. The

child seemed more alert but still definitely retarded mentally. Teething was retarded, and the child showed marked evidence of spasticity on the right side with right spinal curvature and spastic arm and leg.

On March 28, 1951, at 18 months of age, the child was again seen. X-ray of the skull at this time showed further intracranial calcification. The radiologist reported as follows: "The skull is microcephalic. Distributed over the frontal, temporal, and parietal areas are flaky areas of calcium deposit. When viewed from the frontal aspect these flaky calcium deposits are seen to be intracranial. The deposits appear to be limited to the cerebral area. None are seen in the cerebellar area. The frontal-parietal suture line appears to be open. A previous diagnosis of toxoplasmosis has been made." *J. B. Nanninga, M.D.*

Ophthalmological examination of the retina and eye-grounds under general anesthesia resulted in the following report: "Under general anesthesia fundiscopic examination revealed a definite and distinct bilateral old healed chorioretinitis. It was confined to the macular region of the right fundus and was both macular and extramacular on the left, extending from the macular areas of the disc and also superiorly from the disc." *E. K. Enns, M.D.*

Spasticity of all extremities was pronounced. The child could not sit or stand. Mental retardation was marked. Toxoplasmosis antibody titre obtained at this time was positive in a dilution of 1: 16, 384. This test was run under the direction of Dr. Harry Feldman, State University of New York Medical Center, Syracuse, New York.

At the time of this test the mother had given birth to a fourth child—a boy who was then two days old. Antibody titer on the mother and on the newborn was positive in a dilution of 1:1024. Tests on the mother and newborn done six months later were: mother positive 1:256; infant 1:4.

Figure 1. Lateral view of skull of affected child taken at 18 months of age showing the intracranial calcifications characteristic of the disease, congenital toxoplasmosis.

Other members of the family were similarly tested. The second child, aged three years, has a titer of less than 1:64; this is not considered significant. The father and the oldest child, age four years, have negative tests.

During the first pregnancy the family home was rural, near Burrton, Kansas. During the second pregnancy the family was in Newton on East Second Street, a usual residential district. During the third pregnancy, the one resulting in the infected child, the family home was just across the street and east of a large flour mill and elevator. This house has since been razed. The mother states that she was not conscious of the presence of rats or mice in her house. They have had no pet cat or dog at any time; however, there are many squirrels in the vicinity. The mother states that she had no acute illness during her third pregnancy though she does recall night sweats and aching for some time during its early part. This subsided spontaneously and no medical attention was sought. Her first prenatal visit was not made until two months prior to her delivery. Total weight gain was 23 pounds. Urine was always normal and blood pressure showed no abnormalities. It was considered to be a normal pregnancy.

Discussion: The perspective of this case leads one to believe that this mother suffered an acute toxoplasmic invasion during her third pregnancy. The source of this infection is not clear. Through hematogenous transplacental spread the fetus was infected in utero and began to show outward manifestations in the form of central nervous system involvement between the fifth and seventh months of postnatal life. The frequent gastrointestinal upsets might have been of significance. Since the seventh month, observation of this child has shown increasing spasticity and mental retardation. X-ray of the skull shows increasing calcification and growth of the skull is proceeding at a much retarded rate although the sutures are still open. The eye shows the typical chorioretinitis involving the macular area which is characteristic of the disease. The blood serum shows a toxoplasmosis antibody titre which is positive in a dilution of 1:16, 384.

The mother of the child is clinically unaffected by the disease and has since given birth to a fourth child. The antibody titre of the serum of the mother and of the newborn were identical, being positive in a dilution of 1:1024. All previously reported cases of this nature indicate that this new baby will be unaffected by the disease. In a personal communica-

tion from Dr. Harry Feldman of Syracuse University, New York, he states that the serum antibody of the newborn represents a passive transfer from the mother and that in all probability this will be entirely gone by the time the child is six months of age. Specimens of sera sent to him at three and six months of age have confirmed this.

Summary: The relatively newly recognized disease, toxoplasmosis, has been defined and discussed as to its history, incidence, etiology, pathology, symptoms, physical signs, diagnosis and treatment.

A case of congenital toxoplasmosis has been presented and the expected outcome of the latent infection in the mother with reference to subsequent pregnancies has been discussed.

Bibliography

1. Sabin, Albert B.: Toxoplasmosis, Brenneman's Practice of Pediatrics, Vol. 4, Chapter 7, Section III, pp 43-54.
2. Sabin, A. B. and Feldman, H. A.: Chorioretinopathy associated with other evidence of cerebral damage in childhood: a syndrome of unknown etiology separable from congenital toxoplasmosis, J. Pediat., 35:296-309 (September) 1949.
3. Sabin, A. B. and Feldman, H. A.: Persistance of placentally transmitted toxoplasmic antibodies in normal children in relation to diagnosis of congenital toxoplasmosis, Pediatrics, 4:660-664 (November) 1949.
4. Frenkel, J. K.: Pathogenesis, Diagnosis and Treatment of Human Toxoplasmosis, J.A.M.A., 140:369-377 (May 28) 1949.
5. Hyman, Harold Thomas: Toxoplasmosis; An Integrated Practice of Medicine; Progress Volume, 1950 (W. B. Saunders & Co.) pp. 4588-89.
6. Feldman, H. A., State University of N. Y.; Syracuse University, University Hospital of the Good Shepherd, Syracuse 10, N. Y.; Personal Communications.

Glomus Jugulare Tumor*

David M. Gibson, M.D., and G. O'Neil Proud, M.D.**

Kansas City, Kansas

Glomus jugulare tumors are of sufficient rarity to make the report of a case treated with x-ray and surgery of value. To date there have been 21 proven cases recorded, and an additional 13 probable cases have been cited. These tumors have also been termed nonchromaffin paragangliomas and carotid body tumors of the middle ear.

Guild,[1] in 1941, described a structure in the middle ear, usually in the region of the jugular bulb, which closely resembled the glomus caroticum, or carotid body; for this reason he termed this structure the glomus jugularis. A tumor of this body was first reported by Rosenwasser[2] in 1945. LeCompte, Sommers and Lathrop[3] recorded the second case in 1947, and Kirkie,[4] also in 1947, added a third case that occurred in conjunction with a carotid body tumor. Since that time, Winship, Klopp and Jenkins[5] have compiled two more cases, cited six additional proven ones and 13 probable ones. Lattes and Waltner[6] collected eight cases from Columbia University, and listed two more previously unrecorded acceptable cases. The most recent case was published by Dockerty, Love and Patton.[7] Four of the recorded cases have been malignant.[5]

A review of the surgical material at the University of Kansas Medical Center revealed but one case of glomus jugulare tumor.

Case Report

H. I., a 61-year-old, married white woman, was first seen in the Out-Patient Clinic on September 13, 1950. She complained of a growth in the left ear of 10 years duration, and had been treated for fungus infection of this ear for eight years. At no time did she suffer pain. Hearing loss was first noticed in the left ear three years ago.

Examination revealed a red polypoid mass, which completely filled the left ear canal to its bony lip. There was no purulent discharge, but biopsy of the mass was attended by brisk hemorrhage, which was controlled by packing the canal with vaseline gauze; the pathological report was aural polyp with chronic inflammation. Second and third biopsies were done on October 19 and October 24, 1950, which were again complicated by profuse hemorrhage requiring packs. The pathological reports were identical with that which was previously submitted. The remainder of the physical examination brought to light no abnormality, and the mastoid x-rays showed no evidence of sclerosis or trabecular destruction, but only diffuse clouding and thickening of the cell walls. Laboratory findings were essentially within normal limits.

Endaural radical mastoidectomy was performed on November 17, 1950. During the procedure the mastoid antrum and aditus were found to be normal; the middle ear was filled with granulations, and facial twitching occurred whenever this tissue was touched. Considerable granulation tissue was removed but hemorrhage was so profuse that surgery was discontinued since visualization was impossible. The bleeding was controlled by packing. The pathological report on the material submitted was hemangioendothelioma.

X-ray therapy was then given in the amount of 3,364 R, over a period of 15 days, with the hope

*From the Departments of Pathology, Oncology and Otorhinolaryngology of the University of Kansas School of Medicine.
**Trainee, National Cancer Institute.

that the tumor would be destroyed or at least become less vascular, thereby making surgical eradication feasible. In two months time it was noted that the tumor had decreased in size, but had not disappeared. On January 19, 1951, revision of the radical mastoidectomy was carried out with very little bleeding. The tumor tissue was removed from the middle ear and it was discovered that the facial canal was erroded at the genu to the extent of about three mm. The nerve was shredded but there was no solution of its continuity. The lesion had invaded the eustachian tube and semi-canal of the tensor tympani, and extended to the wall of the carotid artery. All visible tumor tissue was removed and a split thickness skin graft was applied.

The patient awakened with a complete left facial paralysis which persisted for six weeks and slowly resolved until function was complete. Packs and sutures were removed on the sixth postoperative day, and the entire cavity was well epithelized within three weeks. There has been no recurrence to date.

Discussion

Since there is considerable controversy in the literature regarding the radiosensitivity of glomus jugulare tumors, we felt that the fact that this lesion diminished both in size and vascularity following irradiation should be reported. Complete surgical removal without damage to important structures was impossible before irradiation due to profuse hemorrhage. X-ray therapy alone proved to be ineffective insofar as total destruction of the tumor was concerned. The decrease in vascularity incident to irradiation made completion of the operation possible.

It is easy for one to miss the diagnosis of this tumor when it occurs in the middle ear, for biopsy reports frequently are returned as aural polyps, since chronic inflammation on the external surface is apparently a constant feature. The otolaryngologist will rarely do deep biopsy in this area for fear of damaging vital middle ear structures. It is quite possible that the disease remains undiagnosed in many instances for its likeness to chronic granulation tissue of chronic otitis media is most evident. Such granulations are frequently treated with strong cauterizing agents for long periods of time.

The diagnosis of glomus tumor was not made until after all the surgical procedures had been carried out. Careful re-examination of the first two aural polyps resected revealed no evidence of tumor. In the stalk of the third polyp removed, however, a small focus of tumor cells was found, from which a definite diagnosis of glomus jugulare tumor could be made. The material from the last two surgical procedures contained abundant tumor tissue.

The gross appearance of glomus tumors is not typical in any way; the tumor commonly presents as a vascular aural polyp, as in the present case. Microscopically, the tumor is composed of numerous small thin-walled, endothelial lined spaces, closely surrounded with small nests and masses of "epitheloid" cells that are large and polyhedral in shape with vesicular nuclei. (Figure 1). Reticulum

Figure 1. Irregular clumps of tumor cells are seen surrounding numerous small vascular spaces in the stalk of an aural polyp. The squamous epithelial lining of the polyp is evident. X 70.

stains reveal delicate reticulum strands surrounding clumps of tumor cells. (Figure 2). The reticulum

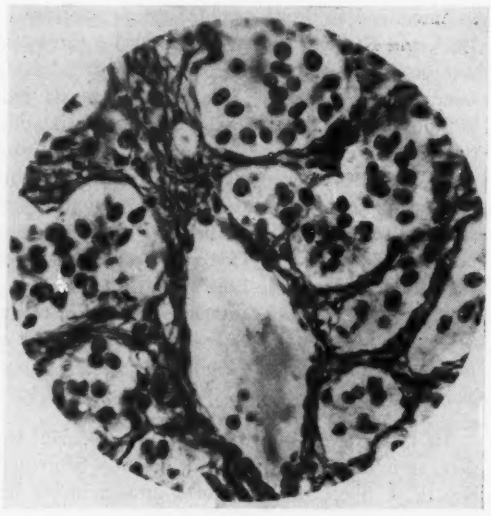


Figure 2. Groups of tumor cells are adjacent to a central endothelial lined space. Reticulum strands surround masses of tumor cells rather than individual cells. Wilder's Reticulum stain. X 600.

strands surround clumps of cells rather than individual cells, and are said to be continuous with the endothelial lining of blood vessels.[6] This is generally true in the present case, but in some areas, reticulum fibers are seen to surround individual cells. The chromaffin reaction has been negative in reported cases. Although the tissue in this case was formalin-fixed, mordanting with chromate salts was done, but negative results were obtained.

The relation of the glomus jugulare and similar structures to paraganglionic or chromaffin tissues is confusing and deserves mention. The adrenal medulla and the organs of Zuckerkandl are properly called chromaffin tissue, or paraganglia, and are characterized by: (a) distinctive staining reactions, the best known of which is the chromaffin reaction; this consists of the appearance of brown or greenish granules in the cytoplasm of the cells after fixation in chromate solutions;[8, 9] (b) the production of epinephrine; (c) innervation largely by preganglionic fibers of the sympathetic nervous system;[10, 11] (d) origin (from the neural crest) from the same cells that differentiate into sympathetic ganglion cells, and maintenance of a close association with sympathetic ganglia.[10]

The carotid body, aortic bodies and the glomus jugulare are all morphologically similar to the adrenal medulla and have been classified as paraganglionic structures by various authors. The carotid bodies differ embryologically as well as functionally from paraganglionic tissue in that they show no epinephrine production and have a chemoreceptor function.[11] The cells usually do not give a positive chromaffin reaction,[12, 13] but this has been occasionally demonstrated.[14] The glomus jugulare and aortic bodies are generally considered to be analagous to the carotid bodies, and tumors derived from these structures are similar in all important respects to carotid body tumors. These cells are regarded as neuroepithelial cells that function as chemoreceptors.[15] Lattes and Waltner[6] and Lattes,[16] who reported tumors of the glomus jugulare and the aortic arch bodies, believe that these structures "are probably homologous parts of a system of organs consisting of masses of nonchromaffin tissue closely associated with the parasympathetic division of the autonomic nervous system and its ganglia." This they call nonchromaffin paraganglionic tissue. Other authors do not regard these structures as being paraganglionic.[10, 11, 13]

Bibliography

1. Guild, S. R.: Hitherto Unrecognized Structure, the Glomus Jugularis, in Man. Anat. Rec. (Suppl. 2) 79:28, 1941.
2. Rosenwasser, H.: Carotid Body Tumor of the Middle Ear and Mastoid. Arch. Otolaryng. 41:64, 1945.
3. LeCompte, P. M., Sommers, S. C., and Lathrop, F. D.: Tumor of Carotid Body Type arising in the Middle Ear. Arch. Path. 44:78, 1947.
4. Kipkie, G. F.: Simultaneous Chromaffin Tumors of the Carotid Body and the Glomus Jugularis. Arch. Path. 44:113, 1947.
5. Winship, T., Klopp, C. T., and Jenkins, W. H.: Glomus-Jugularis Tumors. Cancer 1:441, 1948.
6. Lattes, R., and Waltner, J. G.: Nonchromaffin Paraganglioma of the Middle Ear. Cancer 2:447, 1949.
7. Dockerty, M. B., Love, J. G., and Patton, M. M.: Nonchromaffin Paraganglioma of the Middle Ear. Proc. Staff Meet. Mayo Clinic 26:25, 1951.
8. Lillie, R. D.: Histopathologic Technic. pg. 102. The Blakiston Co., Philadelphia, 1948.
9. Gomori, G.: Chemical Character of the Enterochromaffin Cells. Arch. Path. 45:48, 1948.
10. Hollinshead, W. H.: Chromaffin Tissue and Paraganglia. Quart. Rev. Biol. 15:156, 1940.
11. Boyd, J. D.: The Development of the Human Carotid Body. Contr. to Embryol. Carnegie Instit. 26:1, 1937.
12. Brines, O. A., and Jennings, E. R.: Paragangliomas. Am. J. Path. 24:1167, 1948.
13. Hollinshead, W. H.: A Cytological Study of the Carotid Body of the Cat. Am. J. Anat. 73:185, 1943.
14. Harrington, S. W., Clagett, O. T., and Dockerty, M. B.: Tumors of the Carotid Body. Ann. Surg. 114:820, 1941.
15. Bloom, F.: Structure and Histogenesis of Tumors of the Aortic Bodies in Dogs. Arch. Path. 36:1, 1943.
16. Lattes, R.: Nonchromaffin Paraganglioma of Ganglion Nodosum, Carotid Body and Aortic Arch Bodies. Cancer 3:667, 1950.

93RD ANNUAL SESSION
KANSAS MEDICAL SOCIETY

Kansas City, Kansas **April 27—May 1, 1952**

The headquarters hotel will be the new Town House, Kansas City, Kansas, and it is now time to make reservations. The first hundred applications received will be accepted at the Town House, and arrangements have been made to assign those in excess of that number to four hotels in Kansas City, Missouri, the Continental, the Muehlebach, the Phillips, and the President. All who desire accommodations will be cared for, and all hotel assignments will be made through the Town House.

Address requests for rooms to—

Manager, Town House, Kansas City, Kansas

Further Studies of the Geography of Histoplasmin Sensitivity in Kansas and Missouri

Michael L. Furcolow, M.D.,* and Jay Sitterley, M.D.**

Kansas City, Kansas Topeka, Kansas

Wide geographic differences in histoplasmin sensitivity in the United States have been reported by Palmer,[1, 2] Christie and Peterson,[3] Beadenkopf et al,[4] and Smith et al.[5] These authors all agree that there is an area of very high histoplasmin sensitivity in the east-central United States extending from Kansas on the west to Ohio on the east. Palmer has analyzed histoplasmin sensitivity among student nurses who were lifetime residents of Kansas and Missouri, and found that the rate in northeastern Kansas and north central Missouri was almost 80 per cent, whereas in northwestern Kansas the rate was only seven per cent. Kansas, therefore, appears to be on the western edge of the area of high histoplasmin sensitivity.

Prior and Allen[6] have reported on geographic differences in histoplasmin sensitivity among student nurses and university students in Ohio. They found that the rate of sensitivity dropped sharply from southwestern Ohio to the east and to the north. In fact, the rate in the area near Cincinnati was found to be about 76 per cent, whereas that in northeastern Ohio was about 17 per cent. They also found 13 per cent greater incidence of positive reactions among persons who were reared on farms as compared with persons who were reared in cities. A slightly greater incidence of reactors among males than among females was also reported.

Bunnell and Furcolow[7] have reported on the variation in histoplasmin sensitivity in certain cities in eastern and central Kansas. They found that the reaction rates varied markedly as one moved westward from Kansas City, Missouri. For instance, at age 18 in Kansas City about 70 per cent of school children were found to be positive; in Ottawa, almost the same percentage; in Lawrence, a little over 40 per cent; in Topeka, less than 30 per cent; and in Wichita, about five per cent. This rapid drop as one moves westward appears to be characteristic of Kansas. This phenomenon appeared to merit further study. The present paper describes further geographic distribution of histoplasmin sensitivity in Kansas based upon studies of school children in various counties in Kansas. In addition, studies in one county in Missouri are included for comparison

Material and Methods

The groups tested in this survey consisted of grade and high school children. Students in the public schools reported in this study are from Leavenworth, Cherokee, Harvey, Seward, Sherman, and Thomas Counties in Kansas, and Boone County in Missouri. A total of 7,855 grade and high school students were tested, of which 6,400 were from six counties in Kansas and 1,455 were rural residents of Boone County, Missouri. The age distribution of those tested is shown in Table 1.

The program consisted of a tuberculin and a histoplasmin skin test on each person. All of the tuberculin and histoplasmin skin tests were performed and interpreted by two physicians and two nurses. This provided consistent methods of testing and reading. The results of the tuberculin testing will be reported in a separate paper. The histoplasmin employed in these studies (Lot H 40) was furnished by Dr. Arden Howell, Jr., of the United States Public Health Service. It was employed in a dilution of three to 1,000. One-tenth cubic centimeter of the appropriate dilution of histoplasmin was injected intracutaneously in the forearm and

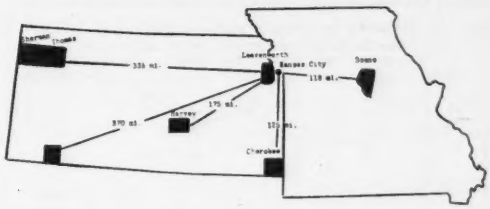
*Senior Surgeon, Field Station, Epidemiologic Service, Communicable Disease Center, Federal Security Agency, University of Kansas Medical Center.

**Kansas State Tuberculosis Society.

Table 1. *Age distribution of 6,400 lifetime residents of 6 Kansas counties and 1,455 lifetime residents of rural Boone County, Missouri*

Age	6 Kansas Counties	Boone County Missouri	Age	6 Kansas Counties	Boone County Missouri
1	.....	13	11	596	124
2	.....	23	12	541	106
3	.....	50	13	489	92
4	.....	47	14	547	83
5	171	66	15	465	63
6	469	143	16	388	40
7	483	156	17	343	18
8	581	138	18	69	6
9	638	149	Total	6,400	1,455
10	620	138			

the tests were read at 48 hours in the majority of cases. A few were read at 72 hours. Measurements were made of both erythema and induration, and a positive reaction was considered to be one in which the induration measured five mm. or more in diameter. Residence histories were obtained on all persons in this study. These residence histories were obtained with considerable care, and a person was classified as a lifetime resident of a particular county if he had not been absent from this county for more than six months at any one time. This paper is based solely on analysis of lifetime residents of the respective counties. The map shows the location of the counties tested and their distance from Kansas City, Missouri.



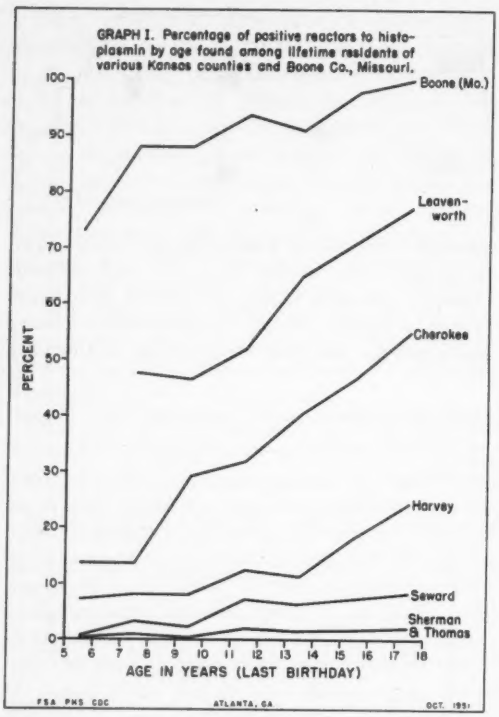
Results: In Table 2 and Graph 1 are shown the results obtained when histoplasmin tests were performed on grade and high school children in the various counties. A total of 7,855 lifetime residents of these counties were tested. The percentage of positive reactors found among these children varied markedly from slightly over one per cent in Sherman and Thomas Counties in the Northwest to 84 per cent in Boone County in Missouri. The sensitivity curves in Graph 1 show a marked increase in reaction rates from west to east with Thomas and Sherman Counties the lowest; Seward County next, about three times as high as Thomas and Sherman Counties; Cherokee County was almost three times as high as Harvey County, and Leavenworth County was somewhat less than twice as high as Cherokee

Table 2. *Number and per cent positive to histoplasmin by age group in six Kansas counties and Boone County, Missouri*

County		Age							
		5-6	7-8	9-10	11-12	13-14	15-16	17-18	Totals
Thomas and Sherman	Number tested	313	299	265	255	244	167	94	1637
	Number positive	1	3	1	5	4	3	2	19
	Percent positive	0.3	1.0	0.4	2.0	1.6	1.8	2.1	1.2
Seward	Number tested	135	120	85	82	48	41	24	535
	Number positive	1	4	2	6	3	3	2	21
	Percent positive	0.7	3.3	2.4	7.3	6.3	7.3	8.3	3.9
Harvey	Number tested	97	319	308	293	247	184	86	1534
	Number positive	7	26	25	37	29	34	21	179
	Percent positive	7.2	8.2	8.1	12.6	11.7	18.5	24.4	11.6
Cherokee	Number tested	94	175	178	150	156	156	80	989
	Number positive	13	24	52	48	63	73	44	317
	Percent positive	13.8	13.7	29.2	32.0	40.4	46.8	55.0	32.1
Leavenworth	Number tested	1	151	422	357	341	305	128	1705
	Number positive	0	72	197	186	221	217	99	992
	Percent positive	0	47.7	46.7	52.1	65	71.1	77.3	58.2
Boone County Missouri	Number tested	209	294	287	230	175	103	24	1455
	Number positive	153	258	253	217	160	101	24	1226
	Percent positive	73	88	88	94	91	98	100	84

County. Boone County, Missouri, was about 50 per cent higher than Leavenworth County.

Reference to Table 2 shows that in the 11-to-12-year-old group in Thomas and Sherman Counties, about two per cent of the children showed positive reactions; whereas, in Seward County the rate was seven per cent; in Harvey County, 13 per cent; in Cherokee County, 32 per cent; in Leavenworth County, 52 per cent; and in Boone County, 94 per cent. Another interesting fact is that the rate in Thomas and Sherman Counties does not increase from the 11-to-12-year group through the 17-to-18-year group. In fact, intervening groups appear somewhat less sensitive. The same appears to be true in Seward County; that is, the 17-to-18-year group shows only eight per cent positive, compared to seven per cent among the 11-to-12-year group. In Harvey County, on the other hand, there are twice as many positives among the 17-to-18-year group as among the 11-to-12-year group. In Cherokee, Leavenworth, and Boone Counties there is a steady rise through all age groups.



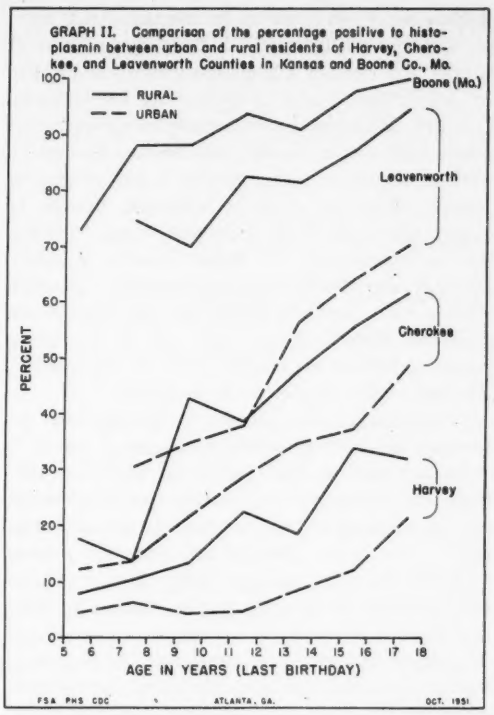
It is evident from Graph I that Boone County, Missouri, represents an extremely high area of histoplasmin sensitivity. In fact, it appears from a review of the literature that these represent the highest rates yet reported. It is seen that 88 per cent of the children were positive in the seven-to-eight-year-old group.

Influence of Urban or Rural Residence on Histoplasmin Sensitivity Rates

In Table 3 are illustrated the different rates found among urban and rural residents. It is interesting to note that in areas of low sensitivity, such as Thomas, Sherman, and Seward Counties in the western third of Kansas, there is very little difference between the urban and rural residents. This is probably accounted for by the fact that there are very few large cities in these counties, and the people are all essentially rural residents. However, in Harvey County, twice as many positives are found among the rural residents as among the urban residents, and in Cherokee and Leavenworth Counties considerably higher rates are found among rural residents than among urban residents. These differences in rates are illustrated in Graph 2, which shows that the rural resident rates are consistently higher than the urban resident rates and that this increased sensitivity among rural

Table 3. *Comparison of percentage of reactors to histoplasmin among urban and rural residents of Kansas*

County	Urban			Rural			Combined		
	Number tested	Number positive	Percent positive	Number tested	Number positive	Percent positive	Number tested	Number positive	Percent positive
Thomas and Sherman	962	12	1.2	675	7	1.0	1,637	19	1.2
Seward	431	15	3.5	104	6	5.8	535	21	3.9
Harvey	918	73	8.0	609	105	17.2	1,527	178	11.7
Cherokee	611	158	25.9	378	159	42.1	989	317	32.1
Leavenworth	1,139	545	47.8	557	442	79.4	1,696	987	58.2
Total	4,061	803	19.8	2,323	719	31.0	6,384	1,522	23.8



residents is most marked where the rates are highest. The rates for rural Leavenworth County residents approach those found for rural residents of Boone County, Missouri. This increased sensitivity among persons with rural residence previously has been noted by Prior and Allen[6] in their studies.

In Table 4 is shown the comparison of the percentage of positive reactors between males and females. It is seen that the over-all per cent positive is a little higher among males than females. However, the difference is not very large.

Discussion

One of the purposes of this study was to attempt to outline some of the epidemiological factors which influence histoplasmin sensitivity. Obviously, the geography played a tremendous part, and it was hoped that the study would establish whether or not any histoplasmin reactors would be found in northwestern Kansas among young children, since it was known from previous study that the rates of reaction were low.

It was found that it was possible to divide the population into two groups based on age; one, under the age of 11 years, appeared to have almost no reactors; the other, over the age of 11 years, appeared to have a rate about three times that of the younger children. Other than this sharp rise in rates about the age of 11 years, the rates appeared constant for each group without the usual yearly rise in rates found in the other counties.

This is perhaps best illustrated by the fact that among 877 children under the age of 11 years who were tested in Sherman and Thomas Counties, about 0.6 per cent were positive, whereas, among 760 children who were over 11 years of age, about two per cent were positive; or the rates among the older children were three times as high as those among the younger children. Similar findings are seen in Seward County, where 2.9 per cent of 240 children under 11 years of age were positive, while 7.2 per cent of 195 children over 11 years of age were positive.

Why the rate should suddenly increase at about

Table 4. *Comparison of percentage of reactors to histoplasmin among males and females*

County	Male			Female			Combined		
	Number tested	Number positive	Percent positive	Number tested	Number positive	Percent positive	Number tested	Number positive	Percent positive
Thomas and Sherman	815	12	1.5	822	7	0.9	1,637	19	1.2
Seward	263	13	4.9	272	8	2.9	535	21	3.9
Harvey	752	96	12.8	775	82	10.6	1,527	178	11.7
Cherokee	504	176	34.9	485	141	29.1	989	317	32.1
Leavenworth	810	508	62.7	886	479	54.1	1,696	987	58.2
Boone County, Mo.	754	634	84.	701	592	84.5	1,455	1,226	84.3
Total	3,898	1,439	36.9	3,941	1,309	33.2	7,839	2,748	35.0

the age of 11 or 12 and remain relatively stationary at this higher rate is not determined. It is interesting to speculate that children, 11 years of age when the tests were done in early 1949, were born in 1938. Review of the U. S. Weather Bureau records shows that 1938 marked the ending of a period of 10 years of very low rainfall in this area characterized by drought, semi-arid conditions, and dust storms. Indeed, this was the heart of the "dust-bowl." It would appear reasonable to suppose that these arid windy seasons were ideal for air-borne dissemination of dried fungus spores, although less conducive to their reproduction. It is interesting to note that a similar break in the infection rate, with doubling of the rates about the year 1938, appeared from calculations of the theoretical annual infection rates in three other areas, Kansas City, Missouri, and Ottawa and Williamsburg, Kansas.[7]

Low though the rates are in northwest Kansas, one must conclude that there are some few natural infections. Though the exact role of wind is not yet understood in the dispersion of this fungus, it is of interest to note that there is an east-to-west wind about five per cent of the time. Since the areas to the east have much higher histoplasmin rates, this might account for an occasional infection. Also, the classification of a lifetime resident may not be strict enough. Though many live in endemic areas without becoming sensitive, it is not yet known how short a period of time will result in hypersensitivity. It is not inconceivable that a short trip into an endemic area might result in an infection with a resultant skin reaction.

There is a definite relationship between the presence of moisture and the growth of most fungi. *Histoplasma capsulatum* has been shown[8] to be particularly dependent upon moisture for its growth. It is of interest, therefore, to compare the average annual precipitation in the different counties as recorded by the U. S. Weather Bureau based on 40 year records.[9]

County	*Station*	*Average Annual Rainfall in Inches*
Boone	Columbia	37.82
Leavenworth	Leavenworth	34.18
Cherokee	Columbus	41.57
Harvey	Newton	30.81
Seward	Kismet	17.31
Sherman	Goodland	17.67
Thomas	Colby	17.86

The comparison of the annual average precipitation with the histoplasmin sensitivity rates shows that in general the higher areas have twice as much rainfall as the lower areas, although the highest area (Boone County) does not have the highest average precipitation. That the relationship to moisture is perhaps not direct is shown by the fact that Cherokee County, which has the highest average annual rainfall, has rates of histoplasmin sensitivity which are below those found in Boone and Leavenworth Counties. Whether this is because of the excessive presence of zinc in the soil of Cherokee County or whether because of other factors is not evident at present. The tree cover in Cherokee County is largely restricted to the southwest corner, whereas that in Leavenworth and Boone Counties is rather generally distributed over the counties. Cherokee County has a river and dam in the southeast corner while the Missouri River forms part of the county border of both of the counties with the highest histoplasmin rates (Leavenworth and Boone).

In comparing the general geography and the presence of moisture in the various areas tested, it is evident that the high plains regions have a definite lack of larger streams, rivers and lakes; hence, surface water rapidly drains away. In the southwest there is less rapid drainage, and there are streams that flow the year round. It would seem, therefore, that in certain well-protected spots where the moisture content is right, there might be circumstances favorable to the growth of the fungus. As one comes further east and into the northeast, these moist-temperature factors are more generalized and favorable to the growth of this fungus. It would seem, therefore, that the geographic variation in reactor percentages could be accounted for in the environmental differences over the state.

Summary

Results of the present study confirm the marked geographic differences in histoplasmin sensitivity rates in Kansas and Missouri. This is of importance to the physician in skin testing because the chances of finding a positive reaction vary markedly with the geographic area in which the patient resides. Thus, positive reactions are extremely rare in northwest Kansas and extremely common in northeast Kansas and Missouri.

Those persons living in a rural environment are much more likely to be positive than those who live in an urban environment. It is postulated that geographic differences may be of importance in histoplasmin sensitivity. Perhaps differences in altitude may simply be reflected in differences in moisture content, which may be the critical factor in the distribution of *Histoplasma* in its natural state.

References

1. Palmer, C. E.: Nontuberculous Pulmonary Calcification. Public Health Reports 60: No. 19 (May 11, 1945).
2. Palmer, C. E.: Geographic Differences in Sensitivity to Histoplasmin Among Student Nurses. Public Health Reports Vol. 61: No. 14 pp. 475-487 (April 5, 1946).
3. Christie, Amos and Peterson, J. C.: Histoplasmin Sensitivity J. of Ped., St. Louis, Vol. 29, No. 4 pp. 417-432 (Oct. 1946).
4. Beadenkopf, William G., Loosli, Clayton, Lack, Herbert, Rice, Frederick A., and Slattery, Robert V.: Tuberculin, Coccidioidin

and Histoplasmin Sensitivity in Relation to Pulmonary Calcifications. Public Health Rep. 64; No. 1 pp. 17-32 (January 7, 1949).
5. Smith, C. E., Saito, M. T., Beard, R. R., Rosenberger, R. G., and Whiting, E. G.: Histoplasmin Sensitivity and Coccidioidal Infection. I. Occurrence of Cross Reactions. American Jour. of Public Health, 39:6 pp. 722-736 (June 1949).
6. Prior, J. A., and Allen, M. F.: Geographic Distribution of Histoplasmin and Tuberculin Reactors Among Ohio State University Freshmen and Student Nurses Training in Columbus, Ohio, Hospitals. Pub. Health Reports, 62, No. 45 pp. 1608-1617 (November 7, 1947).
7. Bunnell, Ivan L., and Furcolow, Michael L.: Variations in Histoplasmin Sensitivity in Certain Cities in Eastern Kansas. Pub. Health Rep. 63: No. 40, pp. 1928-1305, (October 1, 1948).
8. Menges, Robert W., Furcolow, Michael L., Larsh, Howard W., and Hinton, Agnes: The Effect of Humidity and Temperature on the Growth of *Histoplasma Capsulatum*. Jour. Inf. Diseases (to be published).
9. Climate and Man. 1941 Yearbook of Agriculture, U. S. Government Printing Office (1941).

The Role of Thyroid Feedings in Pregnancy*

Lucien R. Pyle, M.D.

Topeka, Kansas

It is without question of doubt that the institution of successful reproduction depends upon the proper balance of the hormones of the glands of internal secretions. In this consideration, I believe we must include the balance in the expectant father as well as the expectant mother.

The thyroid gland and its secretions has been one of the earliest and most studied glands of the body. Yet, I do not believe that we are totally conscious of the complete role that it plays in living and reproduction. It is my intention in this presentation, not necessarily to add anything new to the voluminous material upon thyroid function, but to attempt to emphasize its importance in the obstetric field. Although hyperthyroidism is definitely important, this discussion will be restricted to the hypothyroid state.

In beginning this consideration a brief statement of some of the known functions of the thyroid may clarify some of the clinical assumptions that will be made later on.

Means[1] in his textbook makes the following statements. "Studies extending over a 75-year period have disclosed that the thyroid hormone plays a far-reaching role in the economy of the body. Broadly speaking it has to do with the rate of growth and differentiation of tissues, with the rate of energy exchange, with the metabolism of proteins, carbohydrates, fats and lipoids, salts and water, with the irritability of various tissues and with the activity of the other endocrines.

"It is clear that the thyroid hormone directly increases the rate of oxidation of tissue cells, probably all tissue cells.

"When the organism is deprived of thyroid hormone, along with the decline in the rate of oxidation, there takes place a storage of water, salts and protein. The protein is contained in the body fluids and is not a part of the protoplasmic mass.

"Attainment of adult dimensions and form is impossible in man or animals deprived of their thyroids.

"It becomes evident that the thyroid hormone is far more than an agent accelerating the metabolism of all cells in the body. In addition to being a catalytic agent accelerating energy transformations, the thyroid hormone seems profoundly to affect the life of the cell in every aspect of its existence, its physical states, its chemical state, its irritability, its rate of maturation and the rate under which it undergoes mitosis, that is to say the length of life.

"Life antedated the thyroid hormone, for the hormone is a product of living matter, and life is possible in its absence—a certain sort of life."

Symptoms and Diagnosis of Hypothyroidism

The symptoms of hypothyroidism are many and varied, ofttimes being exact opposites. The patient may be unable to stay awake or may be extremely nervous and sleepless. The pulse rate may be slow or may be fast. The patient often complains of shortness of breath, sighing and yawning respiration, and although she is aware of the ability to inspire deeply, she does not obtain a sensation of relief. Some patients may have no complaints, because they have learned to live within their energy income and have never experienced the boundless energy of their hyperthyroid sisters. Headaches, particularly of the suboccipital variety, occur frequently. Often there occurs substernal pain.

We are all aware of the classical signs of thyroid deficiency, namely the myxedematous type of skin, the sparse brittle hair, etc. However, in the mildly deficient patient the signs are much less marked. The hair is usually dry and brushy with associated thick, scaly dandruff deposit on the scalp, or the hair may be very oily. The pulse rate may be slow or fast, but the heart sounds are usually of poor quality. The repiratory sounds are normal, but the rate of respiration is slow and the depth of respira-

*Read before the Kansas City Obstetrical and Gynecological Society, November 1949.

tion is shallow. I would like to call attention to the sign of splotchy pigmentation so frequently seen over the exposed areas of the body and the dry pigmented areas seen over the ischial tuberosities and other pressure areas of the body. Examination of the thyroid area frequently reveals a nonpalpable thyroid or one that is moderately and diffusely enlarged but is quite firm in consistency. Examination of the mouth frequently reveals narrowed arches, irregular spacing of the teeth and a high, vaulted hard palate.

The common laboratory tests for deficient thyroid function are the basal metabolic rate and the blood cholesterol determinations. Certainly there is much to be learned from these examinations but they do not tell the entire story. Goodall[2] states that "there is a profound objection to the fixation of two percentages between which a patient's basal metabolic rate is considered normal. Such for example, that all patients between minus 10 and plus 10 are within normal rates." In the first place the patient may function best with a plus 10 rate. The patient had a basal reading of minus 10. That is a variation of 20 per cent. Another fallacy of basal readings is the abnormal circumstances under which they are taken. An introspective patient who gets up at the unusual hour after a sleepless night because of anticipation of something unpleasant, dresses, and gets to a basal laboratory perhaps apologetic because she is a little late, in most instances cannot relax, as the result of which we have a reading that is far from her basal reading. The only satisfactory place to take a basal reading on such a patient is in her own bedroom, very shortly after she is awakened from sleep.

In checking blood cholesterol determinations against basal metabolic rate determinations I find that there are frequent cholesterol readings well over, again, the arbitrary limits of 200 or 225 mgm. per cent with basal readings well within the arbitrary limits of normal. Again we find very low basal rates in the poorly fed and protein deficient diet group with normal or low blood cholesterol determinations. I would believe that this is principally a problem of assimilation and possibly a dietary intake very low in cholesterol producing foods. It would be interesting to know what percentage of these patients have defective acid formation in the stomach.

Relationship of Thyroid Hormone to the Obstetric State

The obstetric state is produced by the union of a spermatozoa with an ovum. In this union, through the potentiality of cell division and cell specialization, etc., there results a newborn infant. This infant has the capability of continued growth and development to maturity and the production of cells of reproduction, etc. During the process of division and early growth this new organism is dependent upon the maternal organism for nurture.

What are the conceivable roles that the thyroid hormone may play in the picture? McCahey[3] believes that the thyroid gland bears a definite relationship to spermatogenesis, either by direct action of the hormone upon the germinal epithelium or a secondary action through the metabolic function of the hormone. Means[4] states that "with the exception of true myxedema there are perhaps no conditions in which the use of thyroid hormone is more important than in the treatment of sterility and habitual abortion." If these two theories are correct and if, as quoted earlier, the thyroid hormone profoundly affects the life of the cell in every aspect of its existence, its chemical states, its irritability, and its rate of maturation, we then should be able to transpose some of the results of thyroid deficiency in spermatogenesis, ovagenesis, fertilization implantation, growth and development. We would expect the union of a vigorous spermatozoa and vigorous ovum, implanted on a healthy endometrium, to produce a virile growth organism. But what would be the result of the union of two zygotes, one or the other, or both with decreased irritability, altered mitosis and disturbed rate of maturation? Is this one of the causes of the oft-mentioned blighted ovum, abortion and developmental disturbances?

Lietzenberg and Carey[5] state that "lowered metabolism, even to a moderate degree, interferes with the reproductive function in a large percentage of cases as is shown by disturbed menses, sterility and interruption of pregnancy." Benda[6] states, "We have seen mongolianism occur under the same conditions as abortion, threatened abortion, prematurity and hormonal sterility. We have further seen that there are indications of thyroid and pituitary deficiency." Benda[7] goes on to say that "thyroid anomalies are so frequently seen (about 38 per cent of the two groups tested) that they are an important link in the chain of events. A common denominator is a threshold condition of sterility." Means and Richardson[8] believe that any patient showing the slightest evidence of hypothyroidism should be given thyroid. They state that "there is no question that if this policy is rigidly carried out, few cretins will be born."

Javert, Finn, and Stander[9] in their studies on abortion find that 65 per cent of the primary habitual abortion group and 50 per cent of the secondary abortion group have BMR's of minus value.

Clinical Use of Thyroid Feedings

In this study I wish to present a summary of 267 patients who were given thyroid during the period

of gestation. For the purpose of emphasis I have divided these patients into the following groups: 1. Where thyroid was used as a physiological tonic. 2. In instances of sterility or relative sterility in which we thought that thyroid feedings played a definite part in the subsequent conception and chain of events. 3. The patients who had had one or more spontaneous abortions or premature labors, some of whom had given birth to deficient children but many of whom had had prior normal pregnancies. 4. Patients who had a history of previous toxemia with pregnancy or who gave a history of albuminuria and/or hypertension, either during pregnancy or otherwise. 5. A group of patients who were given thyroid in the postpartum weeks because of fatigue, irritability, sleeplessness, etc.

Many or even most of these patients have been given thyroid because of history, clinical symptoms and physical signs alone and have not had laboratory confirmation of a thyroid deficiency. I realize that I may be criticized in this procedure, but in many instances I did not want to postpone the use of thyroid until satisfactory laboratory determinations could be made. No patient is included in this series, either, who did not clinically tolerate thyroid feedings nor those that we thought were not consistent in taking their thyroid. In no instance was thyroid discontinued during pregnancy.

In summarizing and tabulating the results of this study in composite charts only the main symptoms and results are given. A few patient's histories and results will be given in greater detail for the purpose of emphasis. When the term normal pregnancy it used it will mean a pregnancy proceeding to term without albuminuria, hypertension or other obstetric disease followed by the birth of a normal viable infant.

1. Physiological Tonic

I use this term physiological tonic advisedly because of the effect of thyroid hormone on cellular metabolism and irritability. In this group of patients thyroid was administered for many reasons. Many were taking thyroid because of altered metabolic levels when they became pregnant. In others thyroid was administered because of signs and symptoms as determined on their prenatal visit and examination. Others were given thyroid because of bleeding in the first trimester of pregnancy, if there was any clinical evidence of a thyroid deficiency.

2. Relative Sterility and Sterility

It is without question of doubt that some of these patients would have conceived had nothing been done other than physical examination and the correction of faulty dietary habits, cervical infections, etc.

Illustrative Cases:

1. Well developed and healthy gravida 0, attempting pregnancy for about 18 months. The basal metabolic reading was minus 14. She was placed on thyroid and the dose gradually increased to one and one-half grains. She went to term without complications. A diagnosis of a twin pregnancy was made. After an adequate test of labor she was delivered of healthy di-zygotic twins, by Cesarean section. In the subsequent 11 years she has not conceived.

2. A well developed and nourished gravida 0, attempting pregnancy for about three years. She had always been healthy with the exception of a history of intermittent albuminuria for a period of years. Her basal metabolic rate was minus 41 with a blood cholesterol reading of 204 mgm. per cent. She was placed on thyroid feedings and the dose was gradually increased to three grains. She conceived and delivered normal infants at term at the age of 26, 32 and 34.

3. A somewhat poorly developed and underweight gravida 0 of 23 years of age. When she was 20 years old she had an amputation of the cervix

Table I. Physiological Tonic

	Patients	Before thyroid			After thyroid medication							
		Normal preg.	Ab.	Still born	Normal preg.	Abnor. preg.	Ab.	Still born	Term Died	Prem. Died	BMR Chol.	Av. Dose
On thyroid Before Preg. Small dose	9	1			13	1	1				1	1-1½ gr.
Mod. dose	21	16	3		26		1			1		2-3 gr.
Menst. Dist.	18	4			27			1	1			1½-2 gr.
BMR or Cholesterol	31	10	2	1	31		2				43	1-3 gr.
Thyroid after pregnancy Bleeding	9	1			9							1-2 gr.
Fatigue, etc.	64	34	7		76		2					1-3 gr.
Total	152	66	12	1	182	1	6	1	1	1	44	

Table II—Relative Sterility and Sterility

Patients	Period of Sterility	Total No. Pregnancies	Term Living	Premature Living	Stillborn	Aborted	Ectopic Pregnancy
2	1 yr. minus	6	2	3	1		
6	1-2 yrs.	9	8			1	
6	2-3 yrs.	8	6			2	1
5	3-4 yrs.	8	7			1	
3	4-5 yrs.	3	1	1			1
5	over 5 yrs.	7	7				
27	Total	41	31	4	1	4	2

for a chronic cystic endocervicitis and a resection of one ovary for multiple cysts. She was told that the other ovary was cystic and that if she expected to have a family she should do so as quickly as possible. After attempting to become pregnant for eight months she reported for examination. Her basal metabolic rate was minus 16. She was placed on thyroid and the dose was increased to one and one-half grains. She conceived after four months and went through pregnancy normally until the 36th week when she delivered three days after a spontaneous rutpure of the membranes. Two years later, while still on the same dose of thyroid, she went to 34 weeks when she had a spontaneous rupture of the membranes. Six years later, when she was not taking thyroid, she conceived and had periods of intermittent bleeding until she delivered spontaneously in about 26 weeks. Shortly afterwards she was placed on thyroid, conceived, and went through pregnancy normally until she had a spontaneous rupture of the membranes at 36 weeks. Her first, second and fourth pregnancies terminated with living infants who are now healthy, well developed, active boys.

3. Previous Spontaneous Abortion

It is in this category that I think perhaps the use of thyroid in obstetrics will continue to be of the greatest value. If the figures in Table III are carefully studied, a marked difference in the fetal salvage will be noted.

Illustrative Cases:

1. A well developed and healthy woman 32 years of age. She gave a history of having had five miscarriages, ranging from six to eight weeks during the six years of her married life. This patient was started on thyroid feedings and the dose was gradually increased to two grains a day. After taking this dose for about a year, she conceived and carried to term and delivered without complications.

2. A 39-year-old woman giving the following history: Spontaneous miscarriage at 17, normal pregnancies at 22, 25 and 27, except that one of these children was mentally deficient; missed abortions at six and seven months when 28 and 30 years. She was placed on thyroid and her dose was increased to three grains. She was on this dose for several months when she became pregnant and carried normally to term and delivered a healthy appearing male child.

4. Previous Toxemias

If thyroid is of value in the maintenance of water and salt balance and in the metabolism of proteins and other food substances, its use should have some merit in the patients who have had previous tox-

Table III. Previous Spontaneous Abortion

Patients	Age Group	Before Thyroid Medication					After Thyroid Medication			
		Total Preg.	Normal Preg.	Abortion	Mongo.	Stillborn	Total Preg.	Normal Preg.	Abortion	Stillborn
19	20-24	30	3	26	1		24	24		
20	25-29	37	8	28		1	22	22		
19	30-34	44	8	33		3	22	19	1	2
9	35-up	13	1	10		2	10	9		1
67		124	20	97	1	6	78	74	1	3

emias. Its effect upon cellular metabolism and irritability may provide the necessary stimulus for proper excretion of the by-products of protein metabolism in the kidney.

Illustrative Case:

This patient, a well developed and about average weight woman of 26 years of age, was seen by me during her first pregnancy. She was checked about the 24th week of pregnancy and at that time had made a normal weight gain, had a normal blood pressure and her urine was negative. In her 26th week of pregnancy, she had in less than two hours three severe convulsions. She did not respond well to conservative management and after seven days without marked improvement the uterus was emptied. Six months later a BMR was reported as a minus 21 with a blood cholesterol of 278 mgm. per cent. She was placed upon thyroid and the dose increased to three grains. About a year later she became pregnant and went through pregnancy without complications. Six years later, having been off of thyroid for a couple of years, she had a mild toxemia in the last trimester of pregnancy with albuminuria and increased blood pressure. Labor was induced at 37 weeks. She is now pregnant again and thyroid was started at the onset of her pregnancy. Her blood pressure in early pregnancy ranged between 130/86 to 144/90. She is now 34 weeks pregnant and her last two blood pressure readings have been between 110/70 and 120/76.

5. Physiological Tonic—Postpartum

There are a good many patients in the postpartum period who seem to have a degree of fatigue, weakness, nervousness, hot flashes, etc. entirely out of proportion to those of the average patient. In theorizing, if a patient's metabolism is increased 20 per cent during pregnancy and it begins to return to normal as soon as delivery is effected, it seems rational to at least temporarily break the drop in metabolism by the administration of small doses of thyroid. Distinct symptomatic relief has been obtained in these patients. The required dose is usually small and as a rule it can be discontinued after a few weeks.

Table IV. Previous Toxemias

Type of Toxemia	Age	Parity	Living child	Thyroid dose	Normal Preg.	Elevation B.P.
Increased BP after delivery	22	P1-Gr. II	1	1½	1	
Eclampsia stillborn Inc. BP & edema	21	P0-Gr. II		2	1	
Increased BP and edema	26	P0-Gr. I		1½	1	
Hypertension, stillborn, albuminuria, hypertension	26	P1-Gr. III	1	2	1	
Pre-eclampsia at 36 weeks	27	P1-Gr. II	1	2	1	
Edema and albuminuria	27	P0-Gr. 1		1	1	
Pre-eclampsia—induced at 36 weeks	27	P1-Gr. II	1	1½	1	
Edema and albuminuria	28	P1-Gr. III	1	1	1	
Toxemia? first pregnancy	29	P1-Gr. II	1	1	1	
Eclampsia	29	P1-Gr. II	1	1½	1	
Eclampsia at 26 weeks—stillborn	29	P0-Gr. II		3	1	
	35	P1-Gr. III	1	0	1	Inc?
	38	P2-Gr IV	2	3	34 wks.	
Toxemia and stillborn	29	P0-Gr. II		1½	1	
Known albuminuria for 3 years	30	P0-Gr. I		2	1	
Known albuminuria, intermittent—8 years	30	P0-Gr. I		1	1	
Toxemia, edema, Inc. BP, Induced labors	31	P2-Gr. III	2	1	2	
Toxemia? Induced at 37 weeks	31	P1 Gr. II	1	2½	1	
Eclampsia at 37 weeks	31	P1 Gr. II	1	1½	1	
Chronic nephritis	32	P0-Gr. I		1½	1	
Hypertension and albuminuria—last pregnancy	36	P5-Gr. VI	5	1½	1	140/86
Hypertension since first pregnancy	36	P1-Gr. II	1	2	1	
Hypertension and albuminuria		P1-Gr. II		1½	1	
Total of 21 Patients			20		24	

Table V. Physiological Tonic—Postpartum

16 patients—Chief complaints—dizziness, fatigue, nervo[illegible]ess. Symptoms—improved						

*This group of patients is not counted in the total figures.

Discussion

There have been presented 267 selected patients who were given thyroid medication during pregnancy. I have purposely left out some patients who I thought were inconsistent with their dosage of thyroid and some patients who were given thyroid when they were bleeding and who terminated their pregnancies so quickly that the medication could have no conceivable effect. Thyroid medication was started both before and after conception. The 267 women, while under thyroid feedings, had 336 pregnancies of which there were 311 live births at term and four premature live births. Eight pregnancies terminated with stillborn fetuses, congenital

abnormalities or babies that were born alive and died. There were 11 spontaneous abortions and two ectopic pregnancies. Two hundred forty women of this same group, prior to the administration of thyroid, had had 231 pregnancies of which 183 came to or near enough to term to have living children, and 41 aborted, were stillborn or abnormal in some other way.

In the treated cases there was an uncorrected fetal salvage of 93.7 per cent, and if corrected by the removal of the abortions and ectopic pregnancies, there was a fetal salvage of 97.6 per cent. In the untreated cases there was an uncorrected fetal salvage of 83 per cent. The statistics on the treated cases compare favorably with the figure of fetal salvage for the state of Kansas which was 98.2 per cent in 1947.

In this series of cases there was no maternal mortality. There was only one patient who had a blood pressure level above the arbitrary normal of 140/80. She also had a mild proteinuria.

It is not my intention to attempt to give the impression that thyroid feedings per se are entirely responsible for the results in the low fertility patients who conceived and went to term, or the bleeding patient who didn't abort, or the general results that we obtained. Each of these patients had careful physical examination with her prenatal care. Overweight patients were reduced before conception. Dietary deficiencies, particularly protein deficiencies, were corrected. Chronic pelvic infections were eradicated. They were given supportive treatment whenever indicated.

It must also be borne in mind that many of these patients were extremely desirous of bearing a child, or another child, and that they were most cooperative and diligent in their efforts to accomplish that end. Clinical results are difficult to evaluate. However, as manifested by the cases reported above, I believe that thyroid feedings are of great importance in the obstetric field. I feel we must make a diagnosis of clinical and subclinical hypothyroidism by history and physical examination, by therapeutic trial of small doses of thyroid gradually increased to the point of tolerance, rather than be guided too closely by the minus 10, plus 10 reports from basal metabolic readings.

Summary and Conclusions

There have been presented 336 incidences of pregnancy in 267 patients where thyroid medication was used. The clinical results would indicate that the use of thyroid in pregnancy is important in clinical and subclinical hypothyroidism. Those conditions that should be most benefitted by thyroid are hormonal imbalances producing low fertility, blighted ova, and abortion. The metabolic disturbances affecting water and salt balance, protein balances and storage, and cellular irritability should be improved by thyroid feedings, thereby decreasing the percentage chances of the development of severe grades of toxemia of pregnancy.

Further studies on the use of thyroid feedings in pregnancy should be made before its clinical importance can be completely evaluated.

Bibliography

1. Means, J. H., The Thyroid and Its Diseases, J. B. Lippincott Co., 1948, Pages 38-39-40-41-51 and 52.
2. Goodall, J. R., Jour. Mt. Sinai Hosp. N. Y., 1947, Pages 190-98.
3. McCahey, James F., Med. Clin. of N. A., Nov. 1942, Page 857.
4. Means, J. H., The Thyroid and Its Diseases, J. B. Lippincott Co., 1948, Page 545.
5. Lietzenberg, J. C. and Carey, J. B., Am. Jour. of Obst. and Gynec. 27, Apr. 1929, Page 550-552.
6. Benda, C. E., Mongolianism and Cretinism, Grune and Statton, 1946, Page 279.
7. Benda, C. E., J.A.M.A. V. 139, Apr. 9, 1949, Page 979-985.
8. Means, J. R., and Richardson, E. P., The Diagnosis and Treatment of Diseases of the Thyroid, Offord Medical Publications, 1938, Page 321.
9. Javert, C. T., Finn, W. F., and Stander, H. J., Am. Jour. Obst. and Gynec., V. 57, No. 5, 1949, Page 878-889.

Discussion by H. C. Willumsen, M.D.
St. Joseph, Missouri

The essayist is to be congratulated on the careful analysis and results obtained in this considerable series of cases. The prior-to-treatment cases serve as controls and permit the drawing of some valid conclusions as to the effectiveness of thyroid indication.

In the group of physicians with which I am associated, the subjects of thyroid deficiency and the indications for the administration of thyroid have been frequently discussed. From the clinical standpoint, the use of the drug in many cases seems justified; however, there is some need for caution in its administration, especially in large doses. In the general absence of large controlled series of cases, and with the scant experimental evidence available, the apparent good results in some types of cases, following administration of this hormone, must be viewed with reservations.

The story of reproductive physiology is largely a story of its endocrine mechanism. These mechanisms exert their influence from conception, through nidation, prenatal life and postnatal life; and, as Novak states, "are responsible for the individual's physical and mental attributes and in them confers on him the privilege of immortalizing these attributes by propagating his own species." The evidences of a functional relationship of the thyroid with the gonads is based chiefly upon clinical observation of cases such as have been so well presented by Dr. Pyle tonight.

Very little evidence of a really experimental na-

ture is available. We know that the thyroid increases in size with puberty, that there is slight hypertrophy of many glands at the time of the menses and during pregnancy and lactation; that increases in size have been noted during periods of sexual activity, and in animals after castration. We are aware of the frequency of menstrual disorder in cases of thyroid dysfunction. Retarded ovular maturation with the development of marked cystic degeneration of the ovaries has been observed in clinical thyroid cachexia. Thyroid hypoplasia is associated with general body and sexual hypoplasia and reduced fertility. Even after sexual maturity thyroid extirpation in animals has an unfavorable influence on fertility. Despite these and many other clinical data which correlate closely thyroid and gonadal functions, no specific hormonal connections have been verified and there is no exact knowledge of the relationship implied.

Since, however, the relationship of the other many endocrinal products to pregnancy is equally poorly understood, and the clinical data obtained through their use even less impressive, it is natural and understandable that a readily available and inexpensive medication such as thyroid should be frequently administered in cases exhibiting some type of endocrine dysfunction, especially when clinical evidence of hypothyroidism, mild or marked, is present.

The basal metabolic rate and serum cholesterol concentration are the laboratory procedures employed in determining the existence of the hypothyroid state. However, as pointed out by Dr. Pyle and others, hypothyroidism need not be excluded even if these are normal. If, according to Berglas, withdrawal of thyroid medication is followed by a considerably increased blood cholesterol concentration, thyroid deficiency may be presumed. We are apparently better guided in our indications for medication by the clinical signs and symptoms.

According to Hamblen, the daily hormonal output of the thyroid gland is equivalent to ⅓ mgms. of thyroxin. The form of hormone release from the gland is unknown, but it is then combined with colloid. How much of the thyroid we administer is actually metabolized, has not been determined.

The use of the hormone as a "Physiological Tonic," prenatally, during pregnancy and postpartum, seems justifiable provided the existence of mental and emotional changes, anemias, infectious processes and simple exhaustion and fatigue due to overwork and lack of sleep, have been considered and remedied as adequately as possible. In Dr. Pyle's series of cases there was a three-fold increase in normal pregnancies and a reduction of abortions to less than one-half where the drug was used as a tonic before and during the pregnancies.

Since thyroglobulin, according to Hamblin, enhances the oxidational processes of all body cells, mobilizes protein, controls blood lipid levels, exerts a glycogenolytic action, prevents abnormal storage of water and sodium chloride (probably by facilitating urinary filtration), increases the blood plasma volume and the oxygen dissociation curve of the blood and enhances the activity of the vegetative system, it is logical to conclude that its administration may aid in preventing the development of the toxemias of pregnancy. This point is difficult to evaluate, however, and in those cases presented tonight it is known that careful dietary control was maintained, which in itself may have produced the beneficial effect.

My use of thyroid in obstetrics has been pretty well limited to cases with previous and threatened abortion and in the infertility problems. Here again, because of multiple causal factors and treatments involved, it is difficult to arrive at clear conclusions as to the real beneficial effect of the thyroid medication alone. Dr. Pyle reports 26 pregnancies, 21 carried normally to term, in 19 patients infertile for more than a two-year period.

The most interesting results are in the previous abortion group, where, prior to medication, there was an 84 per cent abortion rate. After medication, this rate was only 1.3 per cent. Here, certainly, one must be impressed with the value of this medication since these results are superior to those reported in controlled series with the use of any other type of medication.

In attempting to evaluate the hypothyroid state (and the use of thyroid) in a small series of my own infertility problems, I found that the BMR was normal ($+10$ to -10) in 63, below normal in 30 per cent and above normal in seven per cent (all of these tests were made in the same laboratory by the same technician). However, as indicated by Dr. Pyle and others, the BMR was on the minus side in 74 per cent of the cases. When viewed from the standpoint of the main infertility factor involved, it was found that 17 per cent had below normal BMR's when the male factor only was involved, whereas 33 per cent of the BMR's were below normal where the ovarian factor was primarily involved.

Seventy-four per cent of all patients received thyroid medication in amounts ranging from 1 $\overline{ss}$ to $\overline{iii}$ grains daily. Thirty-two per cent of all patients became pregnant, all of these while being treated with thyroid. Of 24 cases with ovarian factors primarily involved, 10, or 42 per cent, became pregnant while

on thyroid treatment. Of 14 cases with male factor only involved, four, or 28.5 per cent, became pregnant, and of 12 cases with other factors predominating, only two, or 16.6 per cent, became pregnant. These figures suggest some beneficial action of thyroid administration on ovogenesis and spermatogenesis.

My own results with cases of one or repeated previous abortions have not been so favorable, but thyroid has not been consistently administered. Dr. Pyle's results should stimulate further use of thyroid in this type of case.

The ill effect of thyroid medication in some, especially in the older age group of patients, is known, and despite the fact that the average normal individual can tolerate large doses without apparent ill effect, these dangers cannot be entirely disregarded. Angina pectoris or myocardial infarction can result from an increased demand on an inadequate coronary circulation. A less serious but more frequent complication is muscle pain or cramps which may be related to water migration or anoxia due to sudden increased tissue oxygen demand. Muscle tenderness, occasionally fever, nausea, and rarely vomiting, may occur following the initial administration of (large doses of) dessicated thyroid. A small dose may produce as deleterious an effect as a large one; the action of the drug is cumulative. There is some evidence that large doses of thyroid may inhibit normal gonadal function.

I wish to compliment Dr. Pyle on his presentation this evening and to thank the Society for the privilege of discussing it.

Discussion by Le Roy Goodman, M.D., Kansas City, Missouri

The only thing that I have to add to this is from the largest clinic in the United States that has studied thyroid diseases thoroughly, that of Dr. Means where Dr. Lerman is chief of the clinic. He wrote me the other day, and his private opinion is this: "Thyroid is very useful in the management of patients with various gynecological disturbances, such as metropathia hemorrhagica, irregular periods without local cause, and sterility. One must remember that many patients with myxedema before the menopause have metropathia hemorrhagica. The administration of thyroid overcomes this."

In obstetrics there are two types in which a great deal of thyroid is used. First, patients with colloid goiter and a low metabolism—the purpose is to prevent possible abortion and perhaps prevent cretinism and mongolism. Thyroid etiology of mongolism is not a well documented fact. Second, thyroid is useful in the treatment of habitual abortion. Although large doses of estrin and progesterone have their vogue, I am certain that thyroid is the major answer to this problem. The dosage has to be large to tolerance, four to six grains daily and should be started early enough in the pregnancy and kept up almost to term. Thus far I have treated successfully 30 patients with habitual abortion, three or more miscarriages, by this procedure alone without resorting to the use of estrin or progesterone.

Now I would like to reiterate what Dr. Pyle and Dr. Willumsen have already told you: the necessity of raising and maintaining the metabolism of women who plan to become pregnant. It is desirable that any hypothyroidism that may be present in the father be corrected before pregnancy is undertaken. If parents are living in a goitrogenic zone they should also use iodized salt. A normal concentration of thyroid hormone appears to be necessary for the growth and development of the fetus.

Although patients with myxedema may sometimes become pregnant, even while suffering from amenorrhea, they are much more likely to be sterile and when they do deliver, the offspring is more likely to be cretinoid than from a woman whose thyroid function is normal. The level of metabolism should be raised to the normal and maintained there by the proper dose of thyroid. Pregnancy creates an extra demand for thyroid secretion and the thyroid gland may not provide this extra amount in spite of the hyperplasia occurring in pregnancy. After delivery the thyroid may not always return to normal, perhaps due to the lack of pituitary thyrotrophic stimulation. Hypothyroid patients should get both iodine and thyroid some months before pregnancy is attempted to overcome their sterility and to lessen the risk of abortion. Iodine and thyroid alleviate the mother's demand for thyroxin from the fetus during the last weeks of pregnancy and allow the infant's thyroid to develop.

Although basal metabolic rates rise 20 to 30 per cent during the last months of pregnancy and it has been suggested that this represents the sum total of both the maternal and fetal metabolism, there is no true hyperfunction pathologically. It is frequently referred to as a compensatory response to the increased demands of pregnancy.

Frequently the thyroid hypertrophy tends toward the colloid type of goiter and the secretion of which is inadequate for the extraordinary demands of pregnancy. There is a constant decrease in iodine content in the thyroid in pregnancy and when the iodine content falls below 0.1 per cent of its dried weight of the gland, it undergoes hypertrophy or hyperplasia and may form a colloid goiter. This is especially true if there is insufficient iodine for the discharge of

thyroxin from the gland when the gland is stimulated to over-production. The lowered iodine may be inadequate for increased demands at puberty, pregnancy, sometimes during the menses, and also at menopause. Then a colloid or simple goiter is not an infrequent result. When the iodine is particularly meager, as in pregnancy, there is a noticeable enlargement of the thyroid gland.

Thyroid does not correct the pituitary origin of sterility nor that due to a primary defect in the gonad. It is a peculiar contradiction that in both hypothyroidism and hyperthyroidism there may be an excessive flow or amenorrhea. It is absolutely necessary to distinguish between the lack of thyroid and the lack of the ability of the gonadatropins or the ovarian ovulation to produce fertility.

BLUE SHIELD

From time to time it is desirable for us to understand something of the problems and opinions of doctors in other parts of the country in regard to prepayment of medical care. Because of the valuable information it imparts as well as the picture of progress it shows in the development of the prepayment plans in Wisconsin, a recent article by H. H. Christofferson, M.D., president of the Wisconsin Medical Society, is quoted in part below.

"For more than a decade the State Medical Society of Wisconsin has given a great part of its time and its budget to prepaid health care programs. This effort is inspired by the physicians themselves, spurred on, of course, by the threat of compulsory nationalized medicine. But, fundamentally, these years have been devoted to a search for the best means of meeting the economic and social needs of the patients we serve as well as their scientific needs. Much has been learned. Some unique and significant strides have been made. But the search and study must still go on if progress is to continue.

"At the end of World War II, after some years of study and investigation, the Society launched its prepayment programs. There were few patterns to go by, but the Society knew its obligation to establish plans that would give the low income people of Wisconsin the opportunity to voluntarily budget the costs of medical care within the means of their pocketbooks. The principle of 'full payment' for the surgical expenses of certain low income groups was adopted. Full payment was quickly accepted by the public. It is not difficult to see why. In 1946, the median family income was $2300, with more than 40 per cent of the families earning less than $2,000 annually. These people were desperately seeking a means of obtaining the benefits of modern scientific medicine while preserving the self-respect that every American seeks and enjoys when he can 'pay his own way.'

"Now, five years later, nearly 800,000 Wisconsin citizens have surgical and medical insurance coverage through the Wisconsin Plan and the Blue Shield plans. Despite the marked upgrading of incomes in recent years—the median family income is now $3,000—the need and demand for full payment is as great as ever.

"The reason is apparent from a Federal Reserve Board survey quoted in the June 29 issue of the *U. S. News and World Report.* The Board has found that in 1950 nearly 36,000,000 families in the United States had incomes under $4,000 per year. This is nearly 68 per cent of the families in the nation. Seven million of these earned less than $1,000 during 1950. Nine million families earned between $1,000 and $2,000 that year. Ten million earned between $2,000 and $3,000, and another 10 million between $3,000 and $4,000.

"Nearly 6,500,000 families earned between $4,000 and $5,000; 7,000,000 between $5,000 and $7,500; and 3,000,000 over $7,500.

"So far as paying the costs of health care is concerned, nearly 80 per cent of the families today find themselves in almost the same circumstances as a similar number of people in 1946, when the plans began. Their needs for 'full payment' are just as pressing now as then. This is a problem that the physicians of Wisconsin must face up to if the principle of 'full payment' is to continue as one of the most unique and significant social developments of our day.

"The wisdom of full payment for the low income groups of people has proved itself beyond question. In it lies a respectable and desirable solution to the problem of budgeting for medical and surgical expenses. Without doubt, it provides one of the best arguments against those who would socialize medical care. We have tried it. We know it works. We have an obligation to continue and to improve this device of prepayment in the best interests of both the profession and the public."

Blue Shield medical care plans have enrolled 21 million persons in the United States and Canada, according to an announcement made recently by the Blue Shield Commission, Chicago. More than six million members were enrolled during the past year. There are now 115,000 doctors sponsoring the 77 Blue Shield plans.

PRESIDENT'S PAGE

Dear Doctor:

I would be pleased to meet each and every member of our Society during the approaching yuletide holiday to personally extend the season's greetings. This pleasure is not within the realm of realization, so I shall utilize this page to wish you a Merry Merry Christmas and to convey my sincere best wishes for good health, happiness and success throughout the New Year.

Always sincerely yours,

O. A. Benage

EDITORIAL COMMENT

Dr. Croson Memorial

The Kansas Medical Society will remember Franklin Roy Croson, M.D., for many things. His warm, genial, friendly personality will never be forgotten by those who knew him. His interest in life, his humanity, his idealism will stay within our memory. His untiring efforts in the field of medicine, his long and never ending services to this Society culminating in a term as president have left an indelible impression that will remain.

Greater, perhaps, than all these attributes was his deep and abiding concern for the future of his chosen profession. He had a personal interest in

FRANKLIN ROY CROSON, M.D.

students now in school and worried about their progress and their welfare. The Student Loan Fund of $10,000 for the University of Kansas School of Medicine was established by this Society during his term as president. He took more pride in that project than in any other accomplishment of his year. This was a tangible service, an expression of interest in medicine's future, a gift from the profession itself.

The Council has again voted to add another sizable contribution to this fund. It will be given to the Endowment Association of the University of Kansas and loaned in small amounts to senior students at the School of Medicine who need assistance. These loans will be repaid at a low rate of interest to become of service again and again.

This fund will now permanently become the Dr. Croson Memorial Student Loan Fund. Much additional money is needed to bring the total to a point of maximum service, and individual contributions in any denomination, from the profession or other persons, will gladly be accepted. Checks may be sent to the Kansas Medical Society, 512 New England Building, Topeka, Kansas.

Individual participation is entirely voluntary; the amount may be as large or as small as you wish. It will all go to help needy medical students complete their final academic semester. It will be repaid and be used many times as the years progress. Your gift will be a helping hand to a young man or woman just at the threshold of the profession of medicine. Your gift will be a gesture of friendship to the student who will carry the practice of medicine and its ideals forward into the future.

It will also be something in addition to all this. It will be given in memory of a friend, a fine citizen of Kansas and a truly great physician to whom the practice of medicine was the highest calling on earth.

Dues for 1952

Local, state and national medical society dues become payable as of January 1, and since the subject regularly raises questions in the minds of the membership an attempt is here made to outline the necessary procedures.

Dues for members of the Kansas Medical Society for the year 1952 remain at $25. Payment is required, according to the by-laws, prior to February 1 from all members except those declared by the component society to be honorary, in service or on leave of absence. A dues exempt status is obtained through the county society and is based upon the following criteria. An honorary member is awarded this distinction because of age, outstanding service to the medical profession as well as his society, and a reduced practice limiting his professional income. An in service member may be relieved of the payment of dues for the duration of his active stay in the armed forces. The leave of absence category is a temporary classification relieving the physician from the payment of dues for a limited period covering such situations as an extended illness or a period of graduate study. Members in any of the above classifications retain full privileges but are exempt from the payment of annual dues or special assessments.

All other members of the Kansas Medical Society are required to pay dues. This payment, together with dues required by the county society, will be submitted to the secretary of the component society to which the member belongs. The secretary will forward to the office in Topeka that portion of the

check that is required by the state society. This should be completed prior to February 1, 1952, because only fully paid up members are considered in tabulations apportioning delegates for the House of Delegates of the Kansas Medical Society. Each county society is allotted one delegate for 20 members or major fraction thereof. Delinquencies in the payment of dues can adversely affect a county society's representation.

In addition to the dues payable to the county and the Kansas Medical Society, dues are also required for membership in the American Medical Association. For the year 1952 these also remain at $25. It is important to note that A.M.A. dues should be paid on a separate check made payable to the American Medical Association. Some component societies keep a record of these payments. In that instance, the check should be submitted to the secretary. Where this custom is not followed, the A.M.A. dues should be mailed to the Kansas Medical Society, 512 New England Building, Topeka, Kansas. At this office the payment of A.M.A. dues will be recorded and the check will be forwarded to the A.M.A.

The Kansas Medical Society endorses and recommends A.M.A. membership but has taken no action to make this mandatory. There are many distinct advantages already familiar to the doctors of Kansas that make A.M.A. membership desirable. By way of example, A.M.A. membership dues include a subscription to the Journal of the American Medical Association. The non-member wishing to subscribe to the Journal will pay a subscription cost of $15. A great many other examples might be cited and will be supplied upon request.

Regulations covering this subject differ in certain respects between the American Medical Association and the Kansas society. To begin with, all members are required to pay the A.M.A. dues regardless of their state dues exempt classification. Members having passed the age of 70 years may apply directly to the secretary of the A.M.A., 535 North Dearborn Street, Chicago 10, Illinois, for an honorary classification. Physicians who are exempt from the payment of local or state dues may also be exempt from the payment of A.M.A. dues, but only if an additional request for such exemption is made by the county society and an endorsement of this request is given by the Kansas Medical Society. And then it can be accepted only if it is established that the payment of A.M.A. dues would constitute a financial hardship, or if the member is a commissioned officer in the medical corps of the armed forces, or if the member has retired from active practice, or if he is enrolled in an extended course of graduate education.

The fact that these categories have already been assigned by the local societies has no bearing on the member's status regarding the A.M.A. A separate request must be made for each member. It should further be noted that members exempt from the payment of A.M.A. dues will not receive the Journal of the American Medical Association except on the payment of the usual subscription rate.

Members of the A.M.A. are entitled to all privileges with the exception of holding office. This is restricted to fellows of the A.M.A. To become a fellow, the physician must first be a member and then apply directly to the secretary of the A.M.A. for fellowship. This is granted him following action of the Judicial Council. Prior to 1952 there were fellowship dues in addition to membership dues. Recent action by the Board of Trustees has eliminated dues for fellows, but all other requirements remain as before. Fellowship in the A.M.A. is a category controlled entirely by the A.M.A. No other medical organization has anything to say regarding who is or may not be accepted into this category, but again requests must be made by the individual physician and all previous requirements such as A.M.A. membership must be met at the time the request is made.

There is one further note to add in this discussion. Payment of delinquent dues to the A.M.A. will be required before current dues may be acknowledged. The physician who failed to pay his A.M.A. dues for 1951 and sends a check next year will discover that he will not receive the Journal because those dues will be credited to his 1951 account. Many differences of opinion have arisen in this regard. Should any physician feel that his dues are paid he may write the Executive Office of the state society or to the A.M.A., or both, to have this question resolved.

American Medical Education Foundation

The American Medical Education Foundation is a relatively new project that originated within the A.M.A. It was endorsed by the House of Delegates and has since grown in effectiveness among various lay organizations.

The purpose behind this foundation is readily explained. It is a well known fact that many of the nation's 79 accredited schools of medicine are in serious financial difficulties. The Congress of the United States has demonstrated considerable interest in offering federal appropriations to aid these schools. To counteract this possibility, to prevent the subsequent domination of medical education by political means, to demonstrate in a practical fashion medicine's belief in the free enterprise system, the A.M.A. organized this non-profit education foundation. Except for the smallest possible administrative expenses, all money received will be appropriated to the various schools of medicine in this country.

It will be given without strings or conditions, to be used as needed by the school. It represents the American way of providing the people of this country with a continuing supply of physicians.

It is proper that this proposal should have its inception within the medical profession. It represents one of the finest projects to come out of the A.M.A. in recent years. Not only did the A.M.A. plan this organization but was the first to give a very sizable contribution to put the project in operation. It is now almost one year since the beginning and the first year's goal of one million dollars is only two-thirds achieved. The A.M.A. therefore is now requesting the cooperation of individual doctors to make contributions to this foundation.

It is tragic that after concentrated effort over the period of a year only .003 per cent of the doctors in the United States have contributed financially toward the support of medical education. That at least is the figure first quoted in the Senate of the United States and more recently reluctantly admitted by the A.M.A. to be correct. A few weeks ago actual statistics showed that the state leading all others in this country achieved a record of only 3.56 per cent.

Many things might be said in this regard. For instance, during the battle against socialized medicine the profession was repeatedly criticized for not bringing forth some form of positive action. This is positive action of a type that might offer an important reply to proponents of federal domination of the practice of medicine.

The ease with which the physician might contribute is another subject that could be developed at length. The American Medical Education Foundation has a tax exempt status based on Section 101(6), declaring it to be a scientific program. Therefore, money contributed to this foundation is deductible from the physician's income tax. It is further made convenient because each donor may specify the school to which he wishes his contribution to apply. The school will receive the donation and will be informed of its source. Donations may be in any amounts and will be greatly appreciated, regardless of how small they are.

Checks should be made payable to the American Medical Education Foundation and mailed directly to 535 North Dearborn Street, Chicago 10, Illinois. This is a voluntary program but is a contribution that will meet a most urgent need and one that must have the approval of every physician. The gift will be a tangible expression of the donor's interest in aiding medical schools, but it also presents a clear statement of the donor's belief in the system of free enterprise. It is hoped that Kansas physicians will take special notice of this project and will support it at this time.

Don't Give Your Life for Christmas

M-Day—the day on which traffic will claim its millionth victim—will occur some day this month . . . unless we make an all-out effort to avert it. No one knows just when or where this tragic event will occur. It could be your town. It could be right at the height of the Christmas festivities. However, vigilance on the part of every pedestrian and motorist can help postpone the millionth fatality . . . can help make sure the millionth victim will not be a citizen of your town.

It is ironic that the very things that make for Christmas cheer—the shopping, the parties, the constant rush—also make for traffic accidents. People are not alert to danger when they are preoccupied with the social aspects of the holiday season. Nor are they as receptive to safety advice at this time of year as they are in less hurried seasons. This factor makes it necessary for us to be very careful about overdoing the "grim" aspects of holiday traffic hazards. Pointing out these dangers and giving advice as to how they can be minimized, or avoided entirely, without becoming a "wet blanket" forces the safety worker to walk an extremely thin line between two extremes.

The title and the two paragraphs above were taken from the December release of the Traffic Department of the Kansas State Highway Commission. Too much emphasis cannot be placed on the subject of safety during this season when holiday hazards are added to the risks that are with us 365 days of the year.

Three factors contribute to the heavy holiday toll, increased social drinking with its attendant spirit of festivity, reduced visibility because of winter weather, and wet and slippery roads. Since drinking is an individual problem, it must be approached from that angle. But even the total abstainer cannot dismiss the subject—he must make allowances for the "other" driver who may or may not be temperate.

Some of the hazards of winter weather may be eliminated by proper vehicle maintenance. Included under that heading are a properly functioning heater to deter the formation of steam on the car's windows, a windshield wiper, a defroster, an ice-scraper to keep the windshield free of ice and snow at all times, and proper headlights and tail lights.

The use of tire chains is recommended when highways and streets are covered with snow or ice. Highway Commission tests have shown that a car with chains, traveling at 20 miles per hour, can stop on packed snow in 40 feet; without chains in 69 feet. On icy roads the difference is equally impressive. At 20 miles per hour a car with chains

can stop in 88 feet; without chains, in 169 feet. During wintry weather ice patches may be expected on seemingly dry roads on curves, bridges, in shaded spots and beyond hillcrests, and each driver should be alert for such perils.

Those who drive on slippery surfaces without chains should remember to keep a steady foot on the accelerator. Removing the foot from the throttle suddenly and braking quickly can throw the car into a serious skid.

Added care in driving pays dividends in safety. The December slogan of the Highway Commission should be remembered—"Don't kill your holiday by accident."

Improving Physician-Patient Relationship

As part of a continuing campaign to improve physician-patient relationships, the American Medical Association has produced for distribution to the medical profession a plaque for display in the doctor's office. Addressed "To all my patients," the plaque carries the following two sentences.

"I invite you to discuss frankly with me any questions regarding my services or my fees. The best medical service is based on a friendly, mutual understanding between doctor and patient."

It has been stressed repeatedly that the medical profession would have few public relations problems if each physician spoke frankly and sincerely with each patient on the matter of services and fees. The invitation on the plaque will be evidence to the patient that his physician is willing to arrive at a mutual understanding and will welcome a discussion of medical problems and their related economic factors.

A description of the plaque and complete information on size, appearance, cost and orders will be found in the display on Page XIV of this issue.

ACTIVITIES OF MEMBERS

Dr. Ray Meidinger, Hiawatha, announces that Dr. Maurice S. Wessell is now associated with him in practice. Dr. Wessell formerly practiced in New York state, served in the Army, and since 1947 has been chief surgeon at the VA hospital in Little Rock and associate professor of surgery at the University of Arkansas.

* * *

Dr. Robert Jordan has returned to practice in Lawrence after having spent three years in Minnesota as a fellow in internal medicine at the Mayo Foundation. As a result of his study he received the degree of Master of Science in Medicine from the University of Minnesota.

Dr. Frederick Smith, Wichita, was elected president of the Sunflower Boys State Committee at the annual meeting held in Wichita in October.

* * *

Dr. L. G. Schwartz, Topeka, has opened an office in Hoyt and will practice there on Monday and Thursday mornings.

* * *

Dr. J. F. Casey, manager of Winter VA Hospital, Topeka, and Dr. William F. Roth, chairman of the department of psychiatry and neurology at the University of Kansas Medical Center, Kansas City, spoke as representatives of the two organizations at the opening session of a postgraduate course in psychosomatic medicine held in Topeka early in November.

* * *

Dr. A. J. Wray, Wichita, who has been stationed at Fort Sam Houston, has been transferred to Fort Benning, Georgia, and is now attached to a paratrooper unit.

* * *

Dr. DeWitt S. Lowe, Hiawatha, was one of 29 alumni of Hastings College at Hastings, Nebraska, to be cited for "outstanding achievements and services which reflect honor on the college." The citation was presented at the school's 70th anniversary celebration, October 27.

* * *

Dr. Harle V. Barrett, director of the Leavenworth City-County Health Department, has been assigned to duty with the Army at Fort Ord, California. His successor at Leavenworth is Dr. H. S. Blesse, a former Army medical officer.

* * *

Dr. John G. Hoffer, formerly of Wichita, has opened an office for practice in Medicine Lodge.

* * *

Dr. Charles H. Lerrigo, Topeka, has been receiving favorable comments by critics on his recently published book, "The Better Half of Your Life."

* * *

Dr. Jerome S. Menaker, Wichita, was guest speaker at a meeting of the Wichita chapter of Epsilon Sigma Alpha sorority recently. His subject was "Physical and Mental Health of the Career Woman."

* * *

Dr. A. P. Cloyes, El Dorado, discussed the treatment of burns before a recent meeting of the Graduate Nurses' Club in that city.

* * *

Dr. Funston Eckdall was chairman and Dr. C. W. Partridge assistant chairman of activities in Emporia in connection with the observance of Diabetes Week, sponsored by the Lyon County Medical Society.

Dr. C. H. Benage, Pittsburg, spoke on "Prepaid Medical Insurance the Voluntary Way" before the November meeting of the Woman's Auxiliary to the Sedgwick County Medical Society.

* * *

Dr. John H. Lathrop, Concordia, has been appointed medical examiner for the Civil Aeronautics Administration in that area.

* * *

Dr. Eldon S. Rich, who has been practicing in Bethel, has opened an office for practice in Buhler.

* * *

Dr. Charles Pokorny, Halstead, has been notified that he has passed the sub-specialty examination in pulmonary diseases given by the American Board of Internal Medicine.

* * *

Dr. F. P. Wolff and Dr. R. W. Edwards, Pratt, were representatives of the medical profession in the observance of Diabetes Week in that city last month.

* * *

Dr. John B. Dixon, Parsons, spoke on medical eye problems before a meeting of social welfare case workers of Southeast Kansas at Pittsburg, November 14.

* * *

A feature story about Dr. Ray Vinsant, Summerfield, was published in a recent issue of the Marysville Advocate, paying tribute to the physician who has practiced in that community for 27 years. Dr. Vinsant makes many of his rural calls by plane as he flies a Piper Cub.

* * *

Dr. Paul C. Laybourne of the University of Kansas Medical Center spoke on "Emotional Problems of Children" before a recent meeting of the Parker P.T.A.

* * *

Dr. Elbert D. McNeil, who has practiced in Satanta for two years, closed his office last month to report for duty with the Army at San Antonio, Texas.

* * *

Dr. J. D. Clark, Wichita, was one of the speakers at the first annual meeting of the Kansas Association of Licensed Nursing Homes, Inc., held at Wichita in mid-November.

* * *

Dr. Irene Koeneke, Halstead, Dr. Frances Schiltz, Wichita, and Dr. Cora E. Dyck, McPherson, are now touring South America. From December 2 to 8 they attended the third congress of the Pan American Medical Women's Alliance in Montevideo, Uruguay.

Dr. Warren S. Peiper, Arkansas City, has become a diplomate of the American Board of Radiology as the result of examinations given in June.

* * *

Dr. James O'Shea, who has been practicing with the Southwest Clinic at Dodge City for two years, went to Orange, Texas, last month to report for active duty with the Navy. He has had 13 years of naval service.

* * *

Dr. Ben L. Myers, Iola, was given a gold medal and a citation last month by the Kansas City (Missouri) General Hospital "in recognition of professional services to Kansas City's less fortunate through the Kansas City General Hospital."

* * *

Dr. George J. Pierron, Olathe, announces that Dr. Winston W. Wilcox, recently of Warrensburg, Missouri, will be associated with him in practice after January 1. Dr. Wilcox, a graduate of the University of Kansas School of Medicine in 1927, was a classmate of Dr. Pierron.

* * *

Dr. Rex C. Belisle, who has been practicing in association with Dr. E. C. Petterson in Plainville, has been called to active duty with the Navy.

* * *

Dr. Lester Bowles, Clifton, addressed the P.T.A. in that city recently on the subject of health.

* * *

Dr. G. H. Grieve has returned to his practice in Turon after an absence of four months for a trip abroad with Mrs. Grieve. During his absence his practice was cared for by Dr. W. N. Mundell, Hutchinson.

* * *

Dr. Clyde O. Merideth, Jr., Emporia, discussed excessive use of alcohol and the use of narcotics before the Emporia High Twelve Club at a meeting held November 16.

* * *

The American College of Surgeons has supplied the following list of Kansas physicians who became fellows of the organization this year: Dr. Garland L. Campbell, Arkansas City; Dr. Philip J. Clark, Hays; Dr. Vernon W. Filley, Dodge City; Dr. Jack W. Graves, Wichita; Dr. Frank A. Rieke, Kansas City; Dr. John G. Shellito, Wichita; Dr. John F. Thurlow, Hays.

* * *

Dr. DeMerle E. Eckart resumed his practice in Hutchinson December 1 after having spent a year as a lieutenant commander on active duty at the U. S. Naval Hospital in Oakland, California. He was attached to the Departments of Medicine and Psychiatry at the hospital.

Dr. and Mrs. O. U. Need, Oak Hill, were honored at a community reception on December 2 in observance of their 50th wedding anniversary and also Dr. Need's 50 years in medical practice.

* * *

Dr. C. Omer West, Kansas City, addressed the Rotary Club in that city on November 20 on the subject of socialized medicine in Great Britain. Dr. and Mrs. West recently returned from a trip to Europe.

* * *

A 22-room clinic built in Phillipsburg by Dr. Mary Glassen was dedicated at ceremonies held on November 25.

* * *

Physicians who took part in the program for medical assistants at Arkansas City on November 18 were Dr. Clyde W. Miller, Wichita; Dr. George C. Meek, Dr. W. G. Weston, Dr. Thomas L. Hill and Dr. Bruce G. Smith, Arkansas City; Dr. Warren F. Bernstorf, Winfield.

Topeka Society of Internal Medicine

An organization meeting of the Topeka Society of Internal Medicine was held at the home of Dr. Don C. Wakeman, Topeka, November 7. Membership is limited to qualified physicians limiting their practice to, and interested in the continued advancement of, internal medicine or its allied medical specialties (pediatrics, dermatology, neurology, psychiatry, roentgenology, pathology, public health and other closely related fields).

Aims of the group are: to maintain and advance the highest possible standards of medical practice in internal medicine and allied specialties; to encourage and aid the continued education and advancement of practitioners of these specialties; to maintain the dignity of these specialties and the best traditions of medical ethics; to enhance fellowship among practitioners of these specialties.

Scientific meetings of a postgraduate type will be held bi-monthly or oftener and will be open to all physicians.

Correction

Use of an erroneous word in the Cancer Supplement of the Journal of the Kansas Medical Society, published in September, 1951, is corrected here to avoid misunderstanding. The error appeared on Page 29-A in a paper by Dr. Everett D. Sugarbaker, "Carcinoma of the Breast."

The paragraph begins as follows: "Administration of *testosterone* to males with mammary cancer often produces dramatic regression, to the point where some have advocated this as a reasonable substitute for mastectomy." The word *testosterone* should have been *estrogen*.

DEATH NOTICES

EDWARD EMMETT HENDERSON, M.D.

Dr. E. E. Henderson, 84, an honorary member of the Cherokee County Medical Society, died at his home in Columbus, November 5, after a week's illness following a stroke. He had practiced medicine there, specializing in obstetrics and gynecology, for 42 years. Dr. Henderson was a graduate of the University of Kansas School of Medicine, class of 1907.

* * *

FRANKLIN ROY CROSON, M.D.

Dr. F. R. Croson, 59, who completed his term of office as president of the Kansas Medical Society last May, died November 7 in St. Joseph Hospital, Concordia. He had retired from practice in Clay Center several months ago after having suffered a heart attack.

A graduate of Northwestern University Medical School, Chicago, in 1918, Dr. Croson came to Kansas in 1925 and established practice in Clay Center, specializing in surgery. He was active in civic affairs and was especially interested in the Rotary Club, having attended a number of meetings of Rotary International. He had recently been made an honorary member of the Clay Center club.

Dr. and Mrs. Croson were tireless travelers and had toured extensively in the United States, Central America, South America and Europe.

After having held a number of offices in the Clay County Medical Society, Dr. Croson became a member of the Council of the Kansas Medical Society and served also as secretary of the state organization. He became president-elect in 1949 and took office as president at the annual meeting of the Society in May, 1950.

* * *

ONNIE EARLE STEVENSON, M.D.

Dr. O. E. Stevenson, 69, an active member and former secretary and president of the Labette County Society, died at Menorah Hospital, Kansas City, November 13. He was graduated from the University of Kansas School of Medicine in 1911 and began practice in Labette City, moving to Oswego in 1921.

In 1937 he went to Parsons to serve on the staff of the State Hospital for Epileptics, later becoming superintendent of that institution. He resigned that position last July, continuing on the staff as a consultant.

Case Report from the University of Kansas Medical Center

Obscure Miliary Tuberculosis in Aged Women

Clinical Pathological Conference

Edited by Glen R. Shepherd, M.D., and Mahlon H. Delp, M.D., from recordings of the conference participated in by the departments of medicine, pathology, psychiatry and neurology, roentgenology, and the junior and senior classes of medical students.

Case Presentation

M.F., an 82-year-old white female, a deaf mute, was admitted to this hospital on August 17, 1950, with a chief complaint of "sore stomach and no appetite." She expired on August 22, 1950.

The patient was in her usual state of health until February, 1950, when she noticed the gradual onset of epigastric distress. At first the pain was intermittent in character, having no relation to food or activity, but during the last month before admittance it became constant. Until one month ago her appetite had been good but at this time severe anorexia developed. Concomitant with the anorexia she developed weakness, fatigue, and a generalized tremor. As a result of the weakness she had fallen four times during the last month but none during the last two weeks. The vomitus contained neither blood nor coffee-grounds material.

Past history disclosed usual childhood diseases of measles and mumps without sequelae. A leg abscess was drained in February, 1949, and her physician advised having it opened so that it would heal. Chest x-ray was normal in 1950.

Family history showed two children are deaf mutes, both living and well. Five children died, cause unknown in four, but one died in youth of tuberculosis.

Review of systems showed a history of frequent coryza with much phlegm being expectorated in mornings during the past nine years. This had increased in the past month. There was intermittent pedal edema not related to activity; otherwise the cardiovascular system was noncontributory. On several occasions in the past nine years her urine had appeared red. This had always been relieved by therapy from the local physician. Urine had been red for two days prior to admission to this hospital. Weight loss of unknown amount occurred during the past year.

Physical findings follow: Blood pressure was 105/55, pulse 104. The patient appeared acutely and chronically ill and pointed to the epigastrium as site of distress. She showed signs of recent weight loss. EENT studies showed redness of mucous membranes of nose and eyes, a mucopurulent discharge from nose and arcus senilis and lens opacities bilaterally. There was one non-tender firm lymph node in the left groin. The neck showed no abnormalities, breasts contained no masses, and the lungs were clear to auscultation and percussion. There was marked prominence of the ribs. The heart showed a grade one systolic murmur at the apex. The abdomen disclosed no organs or masses to be palpable, but there was tenderness in the epigastrium—there was no muscle rigidity, and bowel sounds were normal. The extremities showed only an opening on the anterior aspect of left thigh measuring one by 0.5 cm. and draining thick foul greenish-yellow pus.

Laboratory findings follow: Urinalysis of a catheter specimen showed faint trace of albumin, numerous red blood cells, Hematest two plus, and 1-4 granular casts. Red blood count was 4,350,000, hemoglobin 72 per cent, white blood count 9,600, polys 95, filaments 92, lymphs three, and two monocytes. NPN was 28.3, creatinine 1.2, sodium chloride 87 meq., carbon dioxide 29.5 meq., sodium 121 meq., and potassium 4.5 meq.

For the first 24 hours after admission to the hospital the patient had no fever. Daily thereafter fever of 101°F. occurred. On the day of death the temperature was 102°F. The day before death, the respiratory rate increased to approximately 35 a minute and pulse to 120 per minute. She began to cough up more phlegm. Then rales were heard at the right base. She was given penicillin and supportive therapy. The patient expired at 10:05 p.m. on August 22, 1950.

Dr. Mahlon H. Delp (Chairman): The patient was 82 years of age and a deaf mute. That really should challenge the diagnostic abilities of anyone handling this patient's medical problems. There were, however, relatives available for the history but most of them were deaf mutes also.

Dr. Robert Jenson (Medicine Resident): With regard to the fluids—the first day, 2000 cc. of glucose and water were infused; the second day, 1000 cc. None were given IV on the third and fourth days. The last day, 1000 cc. blood plasma were given. The patient's death was respiratory.

Question: Were cultures made of the pus from the patient?

Dr. Jenson: No.

Question: Were any bacteriological studies made?

Dr. Jenson: There was a smear made from the pus which showed one acid fast bacillus. It was repeated and it showed no acid fast bacilli. No sputum examination was done.

Question: Did she ever have any blood in her sputum?

Dr. Jenson: No, not at any time.

Question: Did she have any nocturia?

Dr. Jenson: She had nocturia when she came in here.

Question: What was the location of the abscess?

Dr. Jenson: About two inches below the left inguinal ligament.

Question: Were acid fast bacilli looked for in the urine?

Dr. Jenson: No.

Question: Were GI series done?

Dr. Jenson: Yes. The barium enema and upper GI tract were reported as normal.

Question: Was her blood sugar elevated?

Dr. Jenson: It was 89.

Question: What was the specific gravity of the urine?

Dr. Jenson: The admission urine specimen showed a specific gravity of 1.006.

Dr. Delp: May we have the electrocardiogram now.

Dr. E. Grey Dimond (Medicine): The EKG is full of artefacts. They are not electrical artefacts but rather from tremor in the patient. Apparently all three limbs were shaking.

The rate is around 125. It seems to be sinus in origin, without arrhythmia. T waves in lead I are flattened to inverted. These could be due to potassium changes. They could be due to almost anything.

Figure 1. Lung x-ray taken the day after admission. Although of poor quality due to the patient's uncooperativeness, it shows lung markings consistent with patient's age and possibly soft disseminated inflammatory shadows.

Dr. Delp: Dr. Tice, you have some films.

Dr. Galen M. Tice (Roentgenology): This patient had been examined at different times by different ones in the department. We had the same difficulty that the clinicians had. We are not particularly proud of the technique of any of these films because the patient couldn't cooperate.

This film was seen by one of the residents. It is very hard to tell the exact reason for the lung markings. They were consistent with the age of the patient.

If I had reported the film I would have been a little more impressed with the softness of the shadows. I would have thought of a non-specific type of inflammatory process. Again you have to take account of the inability to cooperate. A film of poor quality resulted. The markings aren't sharply outlined.

It seemed to me in comparing the admission film with a portable film taken the day before death that there had been an increase in infiltration in the right base and appearance of fluid in the costophrenic angle. A diagnosis of bronchopneumonia was made at this time.

Our diagnosis was lung fibrosis consistent with the patient's age. Nothing was noted in the gastrointestinal tract. And the day before death, bronchopneumonia.

Dr. Max Allen (Medicine): I did not actually see this patient. The terminal event, as has been said, was undoubtedly bronchopneumonia. The abscess from the anterior left thigh seems tuberculous. It was an abscess which drained for a long time after opening. I doubt that you can accept one acid fast oraganism in one smear with another smear negative as very good evidence of tuberculosis. Furthermore, I think there ought to be definite evidence of spinal disease, spinal tuberculosis. If there were a psoas abscess which extended that far, Dr. Tice didn't say anything about it.

Dr. Delp: I wish to call upon Dr. Wood and Dr. Steegmann, but I think we will wait until the pathologists have told us about their findings.

Pathological Findings

Dr. James F. Haynes (Pathology Resident): The gross anatomical diagnosis is tuberculous abscess third and fourth lumbar vertebra, psoas abscess with a draining inguinal sinus, granulomata of the pons, bronchopneumonia, pleural effusion, acute dilatation of the heart, and duodenal ulcer.

Dr. William Wyatt (Pathology Resident): The combination microscopic and gross examination diagnoses were tuberculous periostitis with abscess formation, of the third and fourth lumbar vertebra; psoas abscess draining in the left inguinal region;

miliary tuberculosis, involving the lungs, liver, spleen, pons, and kidney; bronchopneumonia; pleural effusion; and acute cardiac dilatation. .

Dr. H. R. Wahl (Pathology): One thing I want you to remember is that this patient was 82 years old. Ordinarily you see tuberculosis occurring in middle life and early adult life. But tuberculosis does occur in senile individuals.

The gastric lesion was a small, sharply defined, punched out ulcer in the duodenum. That might account for the stomach symptoms.

Dr. Delp: It seems quite clear that this diagnosis was, I think I can say, completely missed. I choose to think that it is an excellent example of the failure of our precision instruments and our laboratory facilities to make the diagnosis when we do not have a history. I hope the lack of a history and story of the patient's illness accounts for the fact that the physical findings were not explored to the fullest extent in this case.

I think we could well spend a few minutes now trying to find out just why we didn't make the diagnosis.

Doctor Wood, can you make some comments concerning this case?

Dr. Lawrence E. Wood (Medicine): I think one thing that should be emphasized here, as Dr. Wahl mentioned, is that this patient was an elderly woman. I am sure that in my conversations with physicians the feeling is very prevalent that tuberculosis remains a disease of youth and middle age.

Within the last two years we have had a man admitted to Eleanor Taylor who was 82 years old when the diagnosis of tuberculosis was made.

I think that even a casual perusal of the literature now will indicate the importance of this problem in the aged and how we must certainly keep that possibility in mind. Churchill, in surveying the patients in Forest Heights Sanitorium in New England, reported that in approximately 1300 patients, 16 per cent were 50 years or older at the time of admittance.

I inquired of Dr. Taylor here some time ago about what his experience was at Norton. He said that over 20 per cent of his patients in residence at the hospital were 50 years of age or over.

Certainly I think that tuberculosis is being recognized much more frequently in the older age group, even though it likely does not represent increased incidence.

We should give a little more thought to those draining sinuses. Neglected psoas abscesses will very often come near a groin, down on the anterior surface of the thigh or even laterally, and some of them will even point down on the lower leg. Any sinuses which persist for such a time should certainly excite curiosity about whether or not it is a psoas abscess. I assume there wasn't any thought about underlying bone disease in this patient because nothing was said about it.

These patients represent, of course, tremendous public health hazards. They don't live very long. About one-half of them will die within a year after they are admitted to the sanitorium even though their active tuberculosis is discovered.

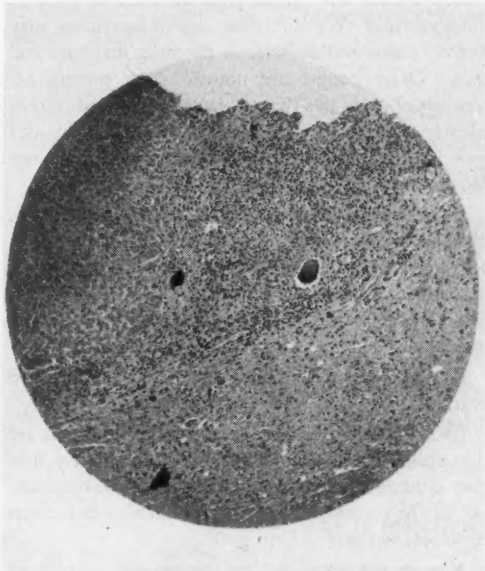


Figure 2. Miliary tubercle containing Langhan's giant cells in the pons.

Figure 3. Discrete pulmonary miliary tubercle with caseous center

Dr. Delp: Dr. Steegmann, in view of the pathological findings in the central nervous system, do you think we could have detected some findings in this patient?

Dr. A. Theodore Steegmann (Neurology): There was a history of the patient having fallen four times with an apparent explanation of generalized weakness. Lesions in the pons often will produce bilateral pyramidal tract weakness without any apparent preliminary stroke because it doesn't cause disturbance in consciousness. In an inflammatory lesion like this, such a lesion would begin and develop much more insidiously. I think this patient might have had some weakness in her lower extremities that was of neurological origin without obvious evidence of it.

Dr. Delp: Dr. Wood, what would be your comment about the significance of finding only one acid-fast organism?

Dr. Wood: I wouldn't make the diagnosis from one acid fast organism discovered in the pus. I would make more than two examinations.

Dr. Tice: I would change the film diagnosis to acute miliary tuberculosis. I would suggest tuberculous involvement anyway. I believe that in reading this film carefully, I can definitely see miliary shadows.

Going back to the film, there is a fibrotic lesion. I think that I can now see the miliary tuberculosis without any question.

In looking at the GI film there is evidence of disturbance in the lumbar spine in the first, second, and third segments. This looks more like an osteoarthritis. Perhaps it could have been picked up. Possibly you can see it. Here is the psoas muscle on the left side.

There is a psoas muscle that is being pushed out by the abscess. It is easy to make a diagnosis after you have had the pathological report.

Dr. Delp: Dr. Major, it seems to me that I can recall several occasions of seeing patients come into medical wards who had what seemed to be a relatively benign disease. At least they didn't attract any undue attention. We didn't think they were critically ill. They turned out to have miliary tuberculosis.

I wonder if we aren't frequently fooled by miliary tuberculosis in patients who come in the general wards. Has it been your experience or not?

Dr. Ralph H. Major (Medicine): I don't think it is as common now as it used to be because for some reason or other we don't get as many as we used to. In the days when we had a good deal of typhoid fever, I think the most common disease confused with it was miliary tuberculosis.

Dr. Delp: Dr. Berry, do you have any comments to make about this case?

Dr. Max Berry (Medicine): I want only to comment as to what Dr. Peete and I were talking about. I am very much surprised that the students didn't make a diagnosis on this case. That indicates to me that they are a little less astute than they should be. Certainly it should have been evident to every one of you that Dr. Lawrence Wood is here.

Dr. Delp: Dr. Wood, the diagnosis of tuberculosis rests upon the demonstration of the organism, a bacteriological diagnosis. It seems to me that very often we are hard put to make the diagnosis, to establish it clearly. Is there any advance being made in diagnostic technique? Should this patient have had a hemo-agglutination test? Should they be done routinely on patients who come in this hospital as well as routine Wassermann tests?

Dr. Wood: There is a great deal of comment that could be made about the hemo-agglutination test and I don't believe anybody knows yet what the value of it is. There seems to be considerable confusion as to how to interpret it. Of course, it is influenced by a good many things. A recent tuberculin test will influence it. I think the test is going to have to be much better evaluated and some definite method of interpretation settled upon before it should be a routine procedure. It is an interesting test, of course. If it proves to be reliable, it would be a useful addition to our diagnostic procedure.

Question: I would like to ask whether in the opinion of Dr. Wood these cases might represent a history of 50 years rather than two or three and whether this woman's original infection could have been carried over that long?

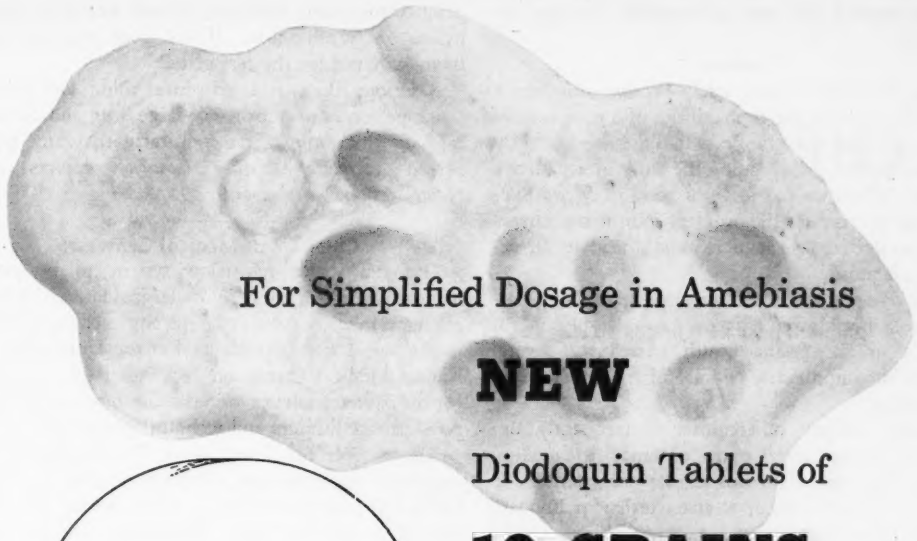
Dr. Wood: Of course your guess is as good as mine on that. We all know that tuberculosis may remain active and smolder in the lung for years and years. Older people are notorious for having accumulations of pus which have developed rather silently, particularly psoas abscess. I have no idea how long she may have had her spinal disease and psoas abscess.

I think that the pathologists reported that this dissemination is fairly recent. Of course she might very well have had an old chronic fibroid tuberculosis smoldering along for years. The family history of one of her children dying of tuberculosis is important. I don't know how old that child was.

Dr. Jenson: The child was approximately 10 years old.

Dr. Wood: Of course, the younger children are that are dying of tuberculosis, the more likely it is they contracted their tuberculosis from some member of their family. In early childhood, tuberculosis is almost entirely a family affair.

You might speculate that this patient could have had an active tuberculosis at that time and that it



For Simplified Dosage in Amebiasis

NEW

Diodoquin Tablets of

10 GRAINS

(650 mg.)

SEARLE

With the introduction of a new 10-grain (650 mg.) tablet of Diodoquin, the number of tablets necessary for treatment of amebiasis can be reduced from ten a day to three a day.

Thus the twenty-day recommended dosage schedule is accomplished with a total of 60 instead of 200 tablets. The cost to the patient is reduced accordingly.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

A potent oral amebacide— **DIODOQUIN** ®

(*diiodohydroxyquinoline*)

—is a well-tolerated, relatively nontoxic compound containing 63.9 per cent of iodine.

Now available in tablets of:

3.2 grains (210 mg.), bottles of 100 and 1,000
10 grains (650 mg.), bottles of 60 and 500

Be sure to prescribe the 10 gr. (650 mg.) size for full adult dosage.

SEARLE **RESEARCH IN THE SERVICE OF MEDICINE**

became walled off and subsequently became reactivated.

Summary

Here is a case chosen solely because this was a situation in which the probabilities of a good history being available were limited. It illustrates perfectly that we depend greatly upon the story of a patient's disease. When we fail to get a good story, we likewise fail to carry out the ordinary routine maneuvers of physical diagnosis which usually lead to an accurate diagnosis.

This case and the discussion emphasize that tuberculosis is not uncommon in the aged person. It poses a unique public health hazard for several reasons but importantly because of frequent lack of recognition.

Finally, miliary tuberculosis is frequently undetected immediately upon entrance to medical wards. One reason for this is that our attention in tuberculosis is focused upon characteristic pulmonary lesions seen in the x-ray. As here, these may be absent. Its clinical similarity to such febrile illnesses as subacute bacterial endocarditis and typhoid fever sometimes further confuses and delays the making of a correct diagnosis.

THE KANSAS PRESS LOOKS AT MEDICINE

Editor's Note. In this secion the Journal reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.

The Diabetes Test Offer

The Pratt County Medical Society should have the thanks of the community for the part it is playing in observance of Diabetes Detection week. From now through Saturday members of the society are offering free tests to any one to determine if they have unknowingly fallen victims of this disease, which ranks in eighth place among human killers. Local physicians have estimated that there are around 40 persons in Pratt who have diabetes but don't know it. To help these persons the county's physicians will accept specimens and test them free if taken to a physician's office or to the hospital. Confidential reports will then be returned to those taking advantage of this generous offer.—*Pratt Tribune, November 15, 1951.*

* * *

Medical Needs

Socialized medicine must be a success in England, as the Conservative party had to promise to continue it, in order to win the election.

Here in the US the only favored people who practice socialized medicine, are our well paid politicians in Washington. If it's good enough for them, why not for the rest of us?

A serious illness is a sad pitiful thing, and when a sick person has the worry of large drug and doctor bills on their minds, it's a miracle that any sick person recovers.—*Esther Conway, Hutchinson News-Herald, November 9, 1951.*

Color TV at Medical Center

The first color television system to be permanently installed for daily undergraduate and postgraduate medical instruction in any medical school in the world was demonstrated at the University of Kansas Medical Center on November 29. Present for the premier telecast were faculty members, other physicians, educators and technical personnel.

The pioneer black and white TV installation at the center two years ago was made possible by state funds. The conversion to a color system was financed by private funds. Equipment installed recently has been under test in the CBS laboratories for the past several months and resulted from two years of university cooperation with Remington-Rand, Inc., the Columbia Broadcasting System, Inc., and the Wilmot-Castle Light Company.

Experience with black and white telecasts has enabled surgeon-teachers at the center to learn the kind of commentary necessary for best teaching results, and has taught them how to keep their hands and instruments from obstructing the camera's view.

Vital Statistics on Children

Vital statistics now available reveal that deaths from heart disease and cancer among children of school age exceed in number deaths from all infections and parasitic diseases combined, it was announced recently by the Federal Security Agency. The announcement was based on a study by the National Heart Institute of the Public Health Service.

In 1948, the latest year for which complete figures are available, cardio-vascular disease and cancer deaths totaled 4,514 in the five to 19 age group. Infectious and parasitic diseases, with tuberculosis the chief cause of death, accounted for 3,990 deaths in the same age group.

There has been an overall decline in the number of deaths from diseases in childhood, including those due to heart disease and cancer, but the decline in infectious and parasitic diseases has been greater because of the use of antibiotics and improved measures for detecting and preventing these diseases.

The Fourth Annual Mid-West Cancer Conference will be held at the Broadview Hotel, Wichita, April 3 and 4, 1952. Make hotel reservations now.

Your LABORATORIES
Our RESPONSIBILITY

CLINICAL PATHOLOGY
PATHOLOGIC ANATOMY

DUNCAN LABORATORIES

Established 1921

909 Argyle Bldg. **KANSAS CITY 6, MO.**
230 Frisco Bldg. **JOPLIN, MISSOURI**

RALPH EMERSON DUNCAN, M.D.
ALBERT E. UPSHER, M.D.

In addition to diagnostic laboratory services, chemically accurate and clinically tested reagents, solutions, stains and culture media are available for immediate delivery.

Senior Thesis from the University of Kansas Medical School*

Early Diagnosis of Gastric Carcinoma

Barton Lee Fischer, M.D.**
Honolulu, Hawaii

Neoplastic disease is second only to heart disease as a cause of death. Various authorities estimate that from 26,000 to 40,000 people in the United States die of gastric cancer every year. With this high incidence, gastric carcinoma has the lowest survival rate of any frequently encountered form of the disease. Mayo Clinic reports a five-year survival rate of 6.2 per cent of 11,000 cases seen at the clinic in the past 32 years.

Gastric cancer is a disease of later life, the average age being 55 years. It is more prevalent in males than in females at the rate of two to one. All sources agree that the prognosis is poor. The best reports on selected cases have only a 50 per cent five-year survival while the best overall picture is only 10 per cent.[1, 2]

The clinical manifestations of early neoplastic disease are meager. In those areas of the body where visualization is difficult or impossible and where no disturbance of function may occur until very late in the disease, doctors now salvage only about one-tenth of the cases.

One of the earliest signs is based on the basic nature of the carcinoma—that of invasion with ulceration and intermittent bleeding. This may persist for a year or longer and may be found associated with the earliest invasive manifestation of cancer. It is therefore of great importance in the presence of hemoptysis, hematemesis or melena to suspect cancer; or conversely to suspect cancer and search for one of the early evidences—that of bleeding.

The onset of carcinoma of the stomach is so insidious and diagnosis so difficult that even with modern techniques, results of detection are poor. In one series of 1,112 patients studied for early and late gastric symptomatology, pain was the first symptom noted in over 40 per cent of the cases.[3] Dysphagia, anorexia, vomiting, weight loss, eructation, bowel symptoms, weakness, nausea, and hematemesis were the first symptoms in that order. Dysphagia was the first symptom in 40 per cent of the patients whose carcinoma involved the cardia of the stomach. Resection studies indicate that pain was registered more frequently whenever the body of the stomach was the site of origin.

If patients with gastric cancer are analyzed as to the most common symptom, weight loss occurs most frequently with 83 per cent of the patients complaining of this symptom.

The analysis of figures on duration of symptom and operability indicate that cancer of the stomach may become inoperable before the patient has any symptom, but also that it may be operable even when the symptoms have been present for over two years. In studies of patients with resectable and non-resectable cancer of the stomach, the duration of symptoms percentage-wise is almost identical. The average patient when untreated dies within 12 months after the onset of symptoms.

Berlin and Porter reviewed a series of patients with carcinoma of the stomach and noted that all but 14 per cent had fever. Thirty-six per cent were thought to have fever of an infectious origin; 50 per cent had fever attributed to the neoplasm. The temperature was of an intermittent type, irregular and with no predilection to nocturnal or diurnal appearance. The fever may occur in the absence of ulceration, or ulceration may occur in the absence of fever as indicated in post-mortem studies.[4]

The most common cause of nonrecognition of moderately advanced and late cancer in all areas is the failure of the practitioner to examine his patients—particularly rectal and pelvic examinations.[1] But with gastric carcinoma the physical findings of early or moderately advanced lesions are relatively obscure. A definite palpable mass may be present in less than half of all patients seen. Cachexia and emaciation are late signs except when the cardia or pylorus is involved in an early stage. The palpation of a mass does not mean that the carcinoma is not resectable or the prognosis is poorer since studies indicate that there is little percentage difference in resectable and non-resectable cases. Physical findings due to metastasis to other organs are seen in a small number of cases.[3]

Laboratory aids in the early diagnosis of gastric cancer have not as yet given any simple and uncomplicated method to determine early cancer. Early laboratory detection must in some way be based on the abnormal pathologic physiology of the early carcinoma. There is a period of natural and normal maturation of tissues with some tissues possibly

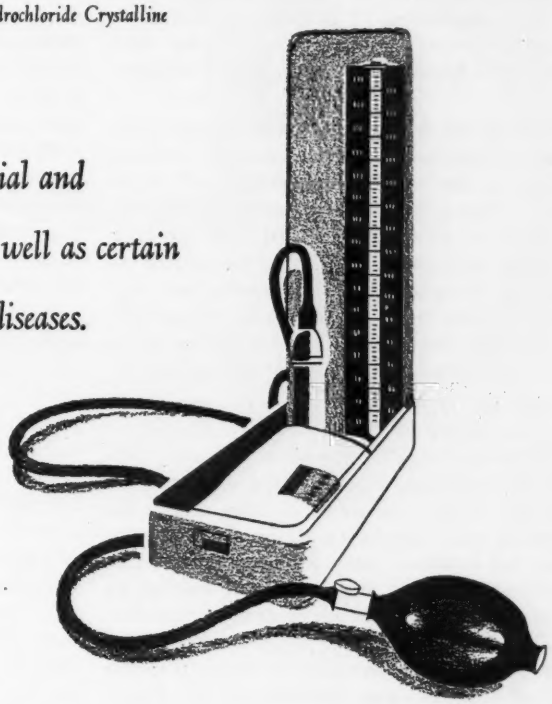
*This is one of 11 senior theses selected for publication by the Editorial Board from a group of 15 judged the best by the faculty of the University of Kansas School of Medicine.

**Thesis written while the author was a senior student at the University of Kansas School of Medicine. Dr. Fischer is now serving his internship at the U. S. Army Tripler General Hospital, Honolulu, Hawaii.

AUREOMYCIN

Hydrochloride Crystalline

Effective against many bacterial and rickettsial infections, as well as certain protozoal and large viral diseases.



The Geriatrist looks always for a treatment which shall act effectively to curb infection, without unduly upsetting normal metabolic processes and immunologic responses. Aureomycin provides a maximum anti-infectious effect with a minimum of disturbance. Infection in the elderly is more apt to be subacute, or chronic, than acute; and of mixed rather than pure type. Under such conditions, the oral effectiveness and broad activity of aureomycin make it of exceptional value.

Capsules: 50 mg.—Bottles of 25 and 100. 250 mg.—Bottles of 16 and 100.
Ophthalmic: Vials of 25 mg. with dropper; solution prepared by adding 5 cc. distilled water.

LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY
30 Rockefeller Plaza, New York 20, N. Y.

more susceptible to precancerous change; there is the period of carcinoma in situ; then the period of early invasive cancer. It is in the last group that some serological test would be most useful. None of the many blood tests proposed for cancer detection have exceeded a 75 per cent specificity for advanced neoplastic disease, nor have any been proved to be specific in detection of early invasiveness.

Currently the most promising new diagnostic aid in cancer detection is the application of cytologic methods in the investigation of various body secretions.[5, 6] The success of this method is due to the exfoliation of malignant epithelial cells into body secretions. The basis of this lies in the reduced cohesiveness of cancer cells. Small cancers may contribute a much larger proportion of desquamated cells than the amount of surface area relative to that of the entire organ would seem to indicate.

Unfortunately, neoplastic cells in the gastric sediment are difficult to find and identify. This is due in part to the immense number of squamous cells from the mouth and esophagus and in part to the secretions in the stomach which early change the exfoliated cells. Experience of the observer, technique, and criteria of early cell change are further complicating factors. Perhaps 50 per cent of all cancer will be missed for one or more of these reasons and false positives are not uncommon, especially in cases of excessive gastritis. It does not seem to be of value as a mass screening device.[7] Papers dealing with this technique report accuracies ranging from 35 per cent to 63 per cent.[5, 8, 9] Obstruction with retention, very malignant tumors and much necrosis present hopeless problems from the standpoint of making a diagnosis.[10]

One of the older laboratory tests which may be done in general practice is that of gastric analysis. The relationship of achlorhydria to gastric cancer has been the subject of many articles. It is a relatively common condition and appears both in normal individuals and associated with diseases other than cancer. An average figure from the literature places achlorhydria at around 65 to 70 per cent in all cases of gastric cancer. In age groups over 50 the analysis of gastric acidity has proven a valuable mass screening device.[11]

Guiss has attempted to study the histologic basis for anacidity in gastric disease.[12] He has demonstrated that the number of normal appearing parietal cells in the mucosa of the gastric fundus is directly dependent on the degree of chronic atrophic gastritis present. Since gastric carcinoma in any area results eventually in a pangastritis, anacidity and achlorhydria are important diagnostic indicators. Brunschwig postulates the presence of a gastric secretory depressant which he feels may be demonstrated experimentally in stomach extracts.[13] He objects to the gastritis anacidity hypothesis on the basis of finding apparently normal gastric mucosa in some persons with true anacidity. Segal has a method of determining gastric acidity without intubation.[14] Intubation is a time consuming procedure in mass surveys. Segal uses quininium resin indicator compounds from the cation exchange resin, Amberlite IRC-50. The quininium cation is displaced by hydrogen ions. Quinine studies are made on the urine to determine amount of hydrochloric acid present in the stomach. Gastric acidity studies remain as one of the better screening aids for gastric carcinoma.

Mass roentgenologic surveys have been made by several clinics.[11, 15, 16] In general, the detection of carcinoma of the stomach in a mass population using roentgenologic methods does not warrant the procedures and cost involved. However, a positive diagnosis may be made in about 90 per cent of those cases who have cancer of the stomach. Rigler used symptomless pateints over 50 years of age but only if they had achlorhydria or free hydrochloric acid of less than 30 units after the use of histamine. He estimated that 90 per cent of gastric cancers will meet the above criteria. In 544 selected patients, three had cancer of the stomach and 19 had polyps.[16] The University of Minnesota has established a cancer detection center incorporating Rigler's criteria and additional criteria such as occult blood, family history of cancer, low unexplained hemoglobin levels, and upper GI symptoms. Seven patients were found to have gastric carcinoma in a series of 1,111 patients.[11]

At least two groups are experimenting with the use of photofluorographic methods. At Johns Hopkins all patients over 50 are now being examined by photofluorography. It is considered to be a low cost, minimum effort, rapid method of screening large groups. Where pathology is apparent, a complete GI series is done. So far, photofluorography approaches the more detailed roentgenologic methods in accuracy by detection of about one carcinoma of the stomach in 700 men and one in every 1,200 women, all asymptomatic patients. Roentgenology remains the number one diagnostic tool in the diagnosis of cancer; unfortunately, the diagnosis *per se* even in asymptomatic individuals may be too late.

The gastroscope may be used as a primary diagnostic tool or in conjunction with other methods of diagnosis. In general an expert gastroscopist can increase by only a few per cent the number of demonstrable gastric cancers detectable by roent-

All Children Can Benefit from *this* Protective Hot Drink at Breakfast

In its widely distributed leaflet No. 268, "Eat a Good Breakfast," the U. S. Dept. of Agriculture states: "Summer or winter, there's something hot, as a rule, in a good breakfast.... Something hot is cheering and tones up the whole digestive route."

The problem of encouraging children to eat an adequately protective breakfast finds easier solution when Ovaltine in hot milk is recommended as a breakfast beverage. Many children clamor for a hot drink at the morning meal, and hot Ovaltine is the right kind of drink to recommend.

A cup of hot Ovaltine makes an excellent contribution of virtually all essential nutrients, adding substantially to the nutritional start for the day. It also serves in a gustatory capacity by enhancing the appeal of breakfast and making other foods more inviting.

The nutrient contribution made by a cup of Ovaltine is apparent from the table below. Note the wealth of essentials added to the nutritional intake by making the simple recommendation of adding a cup of hot Ovaltine to the child's breakfast.

THE WANDER COMPANY, 360 N. MICHIGAN AVE., CHICAGO 1, ILLINOIS

Ovaltine

Here are the nutrients that a cupful of hot Ovaltine, made of ½ oz. of Ovaltine and 8 fl. oz. of whole milk,*provides:

PROTEIN	10.5 Gm.	IRON	4 mg.	NIACIN	2.3 mg.
FAT	10.5 Gm.	COPPER	0.2 mg.	VITAMIN C	10 mg.
CARBOHYDRATE	22 Gm.	VITAMIN A	1000 I.U.	VITAMIN D	140 I.U.
CALCIUM	370 mg.	VITAMIN B_1	0.39 mg.	CALORIES	225
PHOSPHORUS	315 mg.	RIBOFLAVIN	0.7 mg.		

*Based on average reported values for milk.

genologic methods.[18] LaDue in one series using the flexible gastroscope raised the incidence of diagnosis from 88.9 per cent by roentgen examination to 96.5 per cent combined.

Another practical avenue to approach the early diagnosis of gastric cancer is to search for other conditions etiologically related to or associated with gastric cancer. This may be important in selection of patients for more extensive studies when mass surveys are undertaken.

The relation of atrophic gastritis to gastric carcinoma has been discussed for over 100 years. Older groups considered gastritis as a necessary precursor in 90 per cent of the cancers seen.[19] Recently the pathologists conclude that the relationship is unproved and unknown.[20] It has been fairly well proven recently that the carcinoma will give a pangastritis with degeneration of the fundus mucosa regardless of location or size.[12] Actually, on the basis of routine post mortem studies, atrophic gastritis is an exceedingly common condition with advancing age and is frequently associated with conditions other than gastric carcinoma. It is estimated that 80 per cent of the people over 40 years would have to be followed—an impossible task.[2]

Another prominent clinical association with gastric carcinoma has been pernicious anemia. A search for gastric cancer in patients with this disease will reveal an incidence which is much higher than would be expected in the same age group in the general population.[21] Three possibilities are proposed: (1) that pernicious anemia directly produces a precancerous state; (2) that gastric cancer causes pernicious anemia, or (3) that the two diseases are linked through a precursor or manifestations common to both.[22] The latter seems more likely.

There are familial tendencies in both diseases indicative of common constitutional or hereditary factors. Since the advent of liver therapy, the incidence of gastric carcinoma has been increased. The explanation probably lies in the longer survival of the patient rather than on the basis of liver as a carcinogenic agent. Other common factors lead back to achlorhydria and atrophic gastritis which were previously discussed. About 220,000 people die of pernicious anemia each year. The highest figure for coincidence with gastric cancer is 12.3 per cent.[23] If careful follow ups were made on each patient with pernicious anemia, it would amount to only one per cent of the total deaths from gastric cancer. This aspect of cancer detection should be exploited but it cannot produce a marked change in the overall situation.

The relation of gastric ulcer to gastric carcinoma is another field which has been extensively studied. Smith recently reviewed a series of 600 cases of gastric ulcer of which 59 were proven to be malignant. Symptoms were similar in both diseases; with the exception of anacidity, other findings were quite similar. He concluded that gastric ulcers which have not healed in six weeks should be resected.[24] Shellito studied 195 cases of gastric perforation in which 101 were benign and 94 malignant. A typical ulcer history was obtained in 61.4 per cent in the benign and 28.5 per cent of the malignant.[25] The majority of authors express the belief that 10 to 20 per cent of gastric ulcers become malignant. In a careful control program of all patients with ulcers, about one cancer in 10 cases should develop. This method would lead to possibly 20 per cent of all gastric carcinomas.

Gastric polyps are stated to be frequently precancerous in nature. Some pathologists state that the development of malignant change in polyps may be traced morphologically.[28] Estimates of malignant change vary from 12 to 50 per cent.[26] In the overall picture of gastric cancer, polyps are not important because if even 15 per cent became malignant it would still be about one per cent of the total cases of gastric carcinoma. Gastric polyps are fairly rare, but the frequency of diagnosis is increasing. They are more common in the males and occur at about the same age as cancer. They are frequently associated with atrophic gastritis and pernicious anemia; most cases are achlorhydric. Research on polyp formation and degeneration may throw light on the general pattern of malignant change and for that reason is important.

The title of this paper was "Early Detection of Gastric Carcinoma." As one can read in the literature, there is no sure method of gastric carcinoma detection let alone the detection of the early invasive stage. The detection of the early asymptomatic cancer is the prime problem; a problem which has not as yet been solved. Pack[27] developed a cure formula which is still applicable to all cases of gastric cancer: "Cures equal the total number of patients observed, minus the number of patients found to have inoperable gastric cancers, minus the operative mortality after resection, and minus the number of patients dying in the 3, 5 and 10 year postoperative periods after which definitive cures become possible." This formulation was made in 1936. Since then there have been tremendous strides in operative techniques, anesthesia, fluid balance and postoperative care; but all this has raised the overall picture from five per cent to 10 per cent in cures.[29] A factor which has not as yet been assessed is the enormous increase in research in the early detection of cancer.

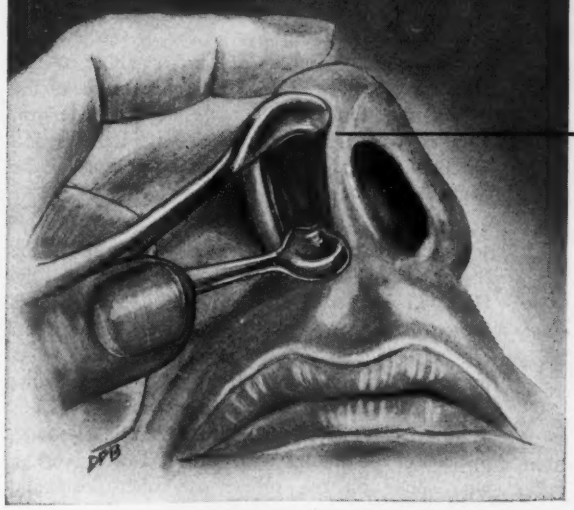
In order to balance the intensive basic research

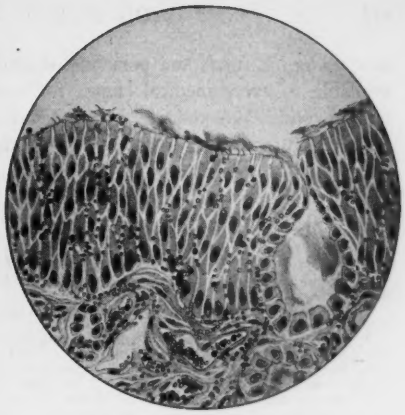
promotes

aeration . . . free drainage

in colds

. . . sinusitis





Nasal membrane showing increased leukocytes with denudation of cilia.

Normal appearing nasal epithelium.

Nasal engorgement and hypersecretion accompanying the common cold and sinusitis are quickly relieved by the vasoconstrictive action of

NEO-SYNEPHRINE®

HYDROCHLORIDE

Brand of Phenylephrine Hydrochloride

The decongestive action of several drops in each nostril usually extends over two to four hours. The effect is undiminished after repeated use.

Relatively nonirritating . . . Virtually no central stimulation.

Supplied in ¼% solution (plain and aromatic), 1 oz. bottles. Also 1% solution (when greater concentration is required), 1 oz. bottles, and ½% water soluble jelly, ⅜ oz. tubes.

Winthrop-Stearns INC.

NEW YORK 13, N. Y. WINDSOR, ONT.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

Neo-Synephrine, trademark reg. U. S. & Canada

now going on, funds and personnel should be made available to every medical center for a cancer detection center. Not that the program will materially alter the cure rate at first, but agile minds should be given the opportunity to observe the technique and methods now in use in order to create better and earlier methods for diagnosing gastric carcinoma.

References

1. Lemon: The Early Diagnosis of Cancer; MCNA 34:1381, Sept. 1950.
2. Barrett: Avenues of Approach to the Gastric Cancer Problem; J. Nat. Can. Inst. 7:115, Dec. 1946.
3. LaDue, Murison, McNeer, Pack: Symptomatology and Diagnosis of Gastric Cancer, Archives of Surgery, 60:305, 1950.
4. Berlin and Porter: Fever: Common Symptoms in Carcinoma of the Stomach, Virgin. Med. Monthly 77:59, Feb. 1950.
5. Cooper and Papanicolaou: The Cytology of the Gastric Fluid in the Diagnosis of Carcinoma of the Stomach, J. Nat. Can. Inst., 7:357.
6. Hollander, Hess, Sober: New Technique for Studying the Cytology of Gastric Aspirates in Man; J. Nat. Can. Inst., 7:365.
7. Swarts, Ragins: Diagnosis of Gastric Carcinoma by Cytologic Examination, Gastroenterology, 14:265, Feb. 1950.
8. Fremont-Smith, Graham, Meigs: Early Diagnosis of Cancer by Study of Enfoliated Cells, JAMA, 138:469, 1948.
9. Pollard, Bryant, Block, Hall: Diagnosis of Gastric Neoplasms by Cytologic Examination of Gastric Secretions; JAMA, 139:71, 1949.
10. Ulfelder et al.: Further Studies on Cytologic Method in the Problem of Gastric Cancer; Ann. Surg. 128:433, Sept. 1948.
11. State: Experience with Screening Tests in Detection of Cancer; Minn. Med. 32:57.
12. Guiss, Stewart: Histological Basis for Anacidity in Gastric Disease; Arch. Surg., 67:618, Nov. 1948.
13. Brunschwig et al.: Experimental Observation of Gastric Cancer; J. Nat. Can. Inst., 1:481.
14. Segal, Miller, Morton: Determination of Gastric Acidity Without Intubation by Use of Cation Exchange Indication Compounds; Proc. Soc. Exper. Biol. and Med., 74:218.
15. St. John, Swenson, Harvey: An Experiment in the Early Diagnosis of Gastric Carcinoma, Ann. Surg., 119:231, 1934.
16. Rigler: Roentgen Examination of the Stomach in Symptomless Persons, JAMA, 137:1501.
17. Roach, et al.: Detection of Gastric Carcinoma by Photofluorographic Methods, Am. J. Roent., 61:183, Feb. 1949.
18. Templeton, et al.: The Diagnosis of Gastric Cancer: An Analysis of the Gastroscopic and Roentgenologic Findings. Am. J. Roent., 47:262.
19. Faber: Chronic Gastritis: Its Relation to Achylia and Ulcer; Lancet, 213:901.
20. Guiss and Stewart: Chronic Atrophic Gastritis and Cancer of the Stomach; Arch. Surg., 46:823.
21. Rhoads: Gastric Anacidity as a Sequel to Gastritis, Particularly the Gastritis of Pernicious Anemia, J. Nat. Can. Inst. 1:511.
22. Kaplan and Rigler: Pernicious Anemia and Susceptibility to Gastric Neoplasms, J. Lab. and Clin. Med., 32:644, June 1947.
23. Kaplan and Rigler: Pernicious Anemia and Carcinoma of the Stomach; Am. J. M. Sci., 209:339.
24. Smith and Jordan: Gastric Ulcer; Gastroenterology, 11:575, Nov. 1948.
25. Shellito and Rivers: Perforation in Benign and Malignant Gastric Lesions, Gastroenterology, 12:919, June, 1949.
26. Miller, Eliason, Wright: Carcinomatous Degeneration of Polyp of the Stomach, Arch. Int. Med., 46:841.
27. Pack: The Radical Surgical Treatment of Gastric Cancer; J. Nat. Can. Inst., 7:337.
28. Carey and Hay: Gastric Polyps; Gastroenterology, 14:280, 1950.
29. Pack and McNeer: End Results in Treatment of Carcinoma of the Stomach, Surgery, 24:769.

COUNTY SOCIETIES

Officers of the Rush-Ness County Medical Society were elected recently as follows; president, Dr. W. J. Singleton; secretary-treasurer, Dr. R. E. Grene. A medical staff for the Rush County Memorial Hospital was also formed at the meeting, Dr. L. A. Latimer being named chief of staff and Dr. J. H. Baker being elected staff secretary.

* * *

The Marion County Society was host to the McPherson and Harvey County Medical Societies at a Thanksgiving dinner at Marion, November 8. Dr. E. H. Skinner, Kansas City, Missouri, spoke on "Treatment of Accessible Cancer at Clinical Conferences," using slides for illustrations.

* * *

Members of the Nemaha County Society were guests of the Marshall County Society at a dinner meeting at the Marysville Country Club, October 25. Speaker of the evening was Dr. William Herbert, Lincoln, Nebraska, who spent a year in England. In his address he pointed out the flaws in the plan of socialized medicine.

* * *

A meeting of the Sedgwick County Society was held at the Allis Hotel, Wichita, November 6. The program was given by the Cancer Committee of the society with Dr. W. H. Fritzemeier as moderator. Speakers were Dr. N. C. Nash, Dr. E. L. Mills, and Dr. B. E. Stofer. The subject was "Tumors of the Cecum and Ascending Colon."

* * *

Dr. A. P. Cloyes was named president of the Butler County Society at a meeting held at the Hotel El Dorado, November 11. Other officers chosen are: Dr. H. Wallace Lane, vice president; Dr. James Shields, secretary; Mr. Gene Wilcox, executive secretary; Dr. J. H. Johnson, board of directors; Dr. F. A. Garvin, board of censors; Dr. G. G. Whitley, delegate; Dr. F. E. Dillenbeck, alternate. Speaker of the evening was Dr. C. F. Taylor, Norton, who spoke on the subject of tuberculosis and modern methods of treatment.

* * *

Dr. Charles Anderson, retiring president of the Labette County Society, was host to the group at a dinner meeting at the VFW Building, Parsons, November 15. Guest speaker was Dr. C. E. Virden, Kansas City, who spoke on "What the X-ray Shows."

Army Develops Casualty Bag

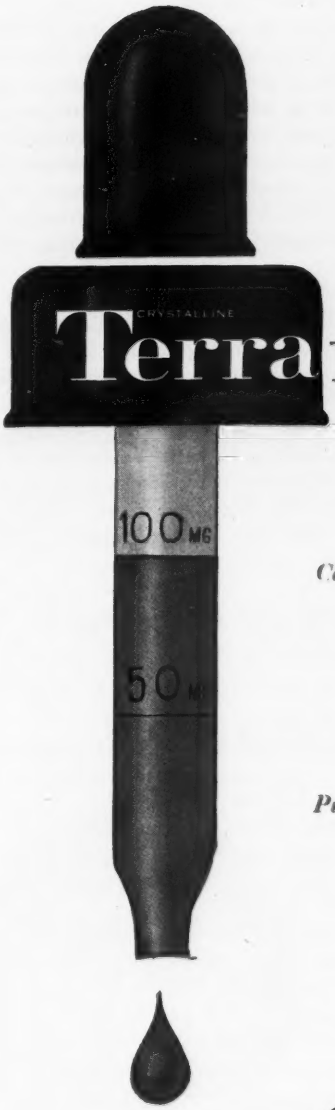
Increased protection for wounded soldiers exposed to frigid temperatures has been developed by the Army in the form of a new casualty bag. An exterior layer of cotton-nylon oxford cloth, insulated with down, forms the principal material of the bag, affording protection from freezing to 50 degrees below zero.

The special design of the bag, with a full-around zipper, makes it simple to place a wounded man inside. Special zippers opening anywhere around the outside permit treatment of wounds without exposing other parts of the body. The bag is roomy enough to accommodate a soldier wearing bulky Arctic clothing plus a splint.

THE ONLY ONE IN ORAL DROPS

only Terramycin *in liquid concentrate for optimal convenience*

Crystalline Terramycin Hydrochloride Oral Drops provide 50 mg. in each 9 drops—or 200 mg. per cc.—a concentration affording optimal simplicity and convenience in dosage.



Can be taken "as is" or mixed with foods and fluids

These potent drops for oral administration are completely miscible with most foods, milk and fruit juices, thus permitting a further simplification in the therapeutic regimen.

Pure crystalline antibiotic—well tolerated

Terramycin Oral Drops are prepared from pure crystalline material. As with other dosage forms of this effective broad-spectrum antibiotic, Terramycin Oral Drops are well tolerated.

Supplied: 2.0 Gm. with 10 cc. of diluent, and specially calibrated dropper.

ANTIBIOTIC DIVISION Pfizer CHAS. PFIZER & CO., INC., *Brooklyn 6, N. Y.*

ABSTRACTS FROM CURRENT LITERATURE

Priscol in Peripheral Vascular Diseases

The Effects of Priscol in the Treatment of Peripheral Vascular Diseases. By Frank Nathan, John A. Strazza, Jr., and James T. Helsper, Ann. Int. Med., 35:1, 19-38 (July) 1951.

These authors first briefly discuss the actions of various drugs in the treatment of peripheral vascular disease.

Diethyl ether, first reported by Katz in 1946, has to be refrigerated because of its explosive potentialities, and was administered by him as a 2.5 per cent solution in five per cent glucose in distilled water. He first treated a group with diabetic arteriosclerosis obliterans, of which 80 per cent with impending gangrene were saved from amputation. Other types of peripheral vascular disease were treated with benefit. Untoward side effects have included fat embolism, jaundice, and gross hematuria.

Wirtschafter and Widmann used ascorbic acid and histidine as follows: 500 mg. of sodium ascorbate were given intravenously, followed by five cc. of a four per cent solution of histidine monohydrochloride intramuscularly plus 100 mg. of sodium ascorbate subcutaneously. These injections were repeated at 4 to 12 hour intervals and ascorbic acid was given orally. Clinically, 11 cases treated responded well to this regimen. Friedell, Drucker, and Pickett treated 25 patients with favorable response in most. However, Allen reported this therapy to be of no value.

Mufson has given histamine intra-arterially with measurable vaso-dilation of the affected limb and distinct clinical improvement.

Shute and coworkers reported remarkable results with a-tocopheral. These authors report it to be entirely inert.

Dibenamine is an effective adrenergic blocking agent. However, Hecht and his group reported severe toxic reactions in a majority of 70 patients. It is considered to be a valuable pharmacologic tool but with limited therapeutic possibilities.

Tetraethyl ammonium was initially reported upon very favorably by Lyons and coworkers. Further work has led to a much less enthusiastic outlook. DeBakey and Pearl, and the authors of this article, have concluded that it is of no value therapeutically or diagnostically.

Priscoline was first reported by Hartmann and Isler in 1939 as a possible agent for treatment of hypertension. Meier and Müller demonstrated the vasodilatory action of priscoline. Grimson and others at Duke University found, with few exceptions, that single doses of 50 to 75 mg. produced changes in the circulation of limbs equivalent to those produced by sympathetic block or sympathectomy.

The authors treated 22 patients with priscol. The peripheral vascular diseases included peripheral arteriosclerosis, thromboangiitis obliterans, frostbite, and Raynaud's disease. Two normal controls received the drug. Oscillometric readings were taken, and temperature readings were made on each of the toes and dorsum of the foot.

The average daily oral dose was 200 to 250 mg. taken in divided dose. The average intravenous dose was 50 mg., given three to four times a day.

Results in the majority of cases were good. All patients showed increased collateral circulation as shown by temperature studies. Intermittent claudication was abolished or improved in most. In cases of thromboangiitis obliterans and frostbite, the ulcerations healed. There were no alarming side reactions.

Of the various drugs discussed, the authors conclude priscoline and intra-arterial histamine appear to be of greatest clinical promise.

Finally, treatment of peripheral vascular disease should be based on time-proved methods, such as rest, intermittent venous occlusion, oscillating bed, reflex vasodilatation by distal application of heat, local and sympathetic nerve blocks, sympathectomy, vascular exercise, foot hygiene, etc. Vasodilators should be used only as supplementary agents.—*E.J.R.*

* * *

Paralysis After Injections

Local Paralysis in Children after Injections. By J. K. Martin, Arch. Dis. Child., 25, 1-13 (March) 1950.

Seventeen children are described in whom paralysis of a single limb occurred within 28 days of receiving an injection. Fifteen injections were for immunization and two for penicillin. Paralytic cases are not included unless paralysis occurred within 28 days. The average time between the injection and the onset of the flaccid paralysis was 16 days. The majority occurred between 7 and 21 days. The shortest interval was three days and the longest 26 days. All the patients were ill at the time of the paralysis, some mild and a few severe. Neck rigidity was present in four cases.

It seems possible that in these post inoculation cases, polio virus was introduced at the time of the injection of penicillin or immunization materials.

Investigations now in progress by the New York State Board of Health have shown the occurrence of many similar cases in the United States.

THE
Lattimore-Fink Laboratories

TOPEKA, KANSAS

J. L. Lattimore, A.B., M.D., *Director*
A. A. Fink, M.D., *Pathologist*
A. C. Keith, B.S., *Chemist*
H. C. Ebendorf, M.T., *Serologist*
L. A. Hull, A.B., Bacteriologist

PATHOLOGY, SEROLOGY, CHEMISTRY, BACTERIOLOGY,
HEMATOLOGY AND PARASITOLOGY

Containers furnished upon request.

OFFICES:

Topeka, Kan. **El Dorado, Kan.** **Sedalia, Mo.** **McAlester, Okla.**

Refresh...add zest
to the hour

The desirability of discontinuing elective injections during epidemics of poliomyelitis is possibly debatable, but it is certainly important that needles and syringes be carefully sterilized (preferably by autoclaving), and that a strong antiseptic such as iodine be used on the skin and on the stoppers of materials used for injection.—*D.R.D.*

ANNOUNCEMENTS

The Mississippi Valley Medical Society will sponsor its 12th annual essay contest in 1952, offering a cash prize of $200, a gold medal, and a certificate of award for the best unpublished essay on any subject of general medical interest, including medical economics and education. Contestants must be members of the A.M.A. and residents and citizens of the United States.

Contributions, not to exceed 5,000 words, must be submitted in five copies not later than May 1, 1952. Complete information may be secured from Harold Swanberg, M.D., Secretary, Mississippi Valley Medical Society, 209 W.C.U. Building, Quincy, Illinois.

* * *

The Foundation of the American Society of Plastic and Reconstructive Surgery, Inc., in announcing winners of this year's awards in its essay contest, revealed plans for a similar competition in 1952. Information may be secured from the Award Committee, c/o Jacques W. Maliniac, M.D., 11 East 68th Street, New York 21, New York.

* * *

The American Board of Obstetrics and Gynecology announces the election of Dr. John L. Parks, Washington, D.C., as a member and director of the board. Dr. Parks succeeds Dr. Joseph L. Baer, who has been vice president of the board for more than 20 years.

* * *

The Cancer Cytology Center of the Dade County Cancer Institute, an affiliate of the Medical Research Foundation of Dade County, Miami, Florida, has announced its first one-week seminar for physicians to be held at the Institute, January 14-19, inclusive. Attendance will be limited to 35 physicians, applications being accepted through January 12. Information may be obtained from the Institute, 1155 North West 14th Street, Miami, Florida.

* * *

The 17th International Congress of Ophthalmology will be held in New York City in the autumn of 1954 at the invitation of the American Opthalmological Society, the Section on Ophthalmology of the A.M.A., the Association for Research in Ophthalmology, and the American Academy of Ophthalmology and Otolaryngology. The first council was held in Brussels, Belgium, in 1857, and congresses have been held at four-year intervals since that time except for interruptions caused by war. New York was the scene of the fifth congress 78 years ago.

* * *

The Fifth American Congress on Obstetrics and Gynecology will be held at the Netherland Plaza Hotel, Cincinnati, March 31-April 4, 1952 under the sponsorship of the American Committee on Maternal Welfare.

Congress registration fees are $5.00 for members and $10 for non-members. Information may be secured from Mr. Donald F. Richardson, Executive Secretary, 116 South Michigan, Chicago 3, Illinois.

Symposium on Weight Problems

Four organizations, the American Medical Association, the American Dietetic Association, the Metropolitan Life Insurance Company and the United States Public Health Service, cooperated in an exhibit symposium on related overweight, nutrition and health problems at the clinical session of the A.M.A. in Los Angeles, December 4-7.

Continuous demonstrations were presented at five exhibits, and competent speakers discussed the subject at half-hour intervals throughout each day. A motion picture, "Losing to Win," was shown twice daily.

Lilly to Feature Painting Series

As part of a widespread campaign to publicize unique qualities and benefits of American medicine, emphasizing the conviction that an aroused America is the most formidable bulwark against the many threats to freedom in our country, Eli Lilly and Company will feature a "Medicine in America" series of paintings in its bimonthly publication, *Physician's Bulletin,* in 1952.

Six scenes have been chosen to illustrate representative aspects of America's patient-physician relationship. These will appear as a cover-flap in each issue and will be bound so that they may be taken out and displayed in physicians' waiting rooms.

Antabuse Available

Antabuse, a drug recently developed for use in alcoholics, is now available for general prescription employment. Taken alone it produces no reaction, but if the patient under treatment indulges in even small amounts of alcohol, extreme discomfort results. It should be prescribed under close medical supervision and with the full knowledge of the patient.

Exclusive sales and distribution rights for the North American continent are held by Ayerst, McKenna and Harrison.

ANNUAL CLINICAL CONFERENCE

CHICAGO MEDICAL SOCIETY

March 4, 5, 6, 7, 1952 — — — — — — — — — — — — Palmer House, Chicago

Special Feature of the 1952 Conference — DAILY TEACHING DEMONSTRATIONS

Thirty-four outstanding teachers and speakers will present half-hour lectures on subjects of interest to both general practitioner and specialist.

FOUR PANELS ON TIMELY TOPICS

Scientific Exhibits worthy of real study and helpful and time-saving technical exhibits.

The CHICAGO MEDICAL SOCIETY ANNUAL CLINICAL CONFERENCE should be a MUST on the calendar of every physician. Plan now to attend and make your reservation at the Palmer House.

Woodcroft Hospital--Pueblo, Colorado

A private hospital for the scientific treatment of neuro-psychiatric disorders, including alcoholism and drug addiction. Beautiful landscaping and h[illegible]ds afford a restful atmosphere. Accommodations vary from single rooms with or without bath to rooms en suite, allowing for segregation of guests.

Detailed information furnished on request.

Karl J. Waggener, M.D.

BOOK REVIEWS

Peptic Ulcer—Clinical Aspects, Diagnosis, Management. Edited by David J. Sandweiss. Published by W. B. Saunders Company, Philadelphia. 790 pages, 164 figures. Price $15.

This volume was published under the auspices of the American Gastroenterological Association and is a compendium of the individual contributions of 77 distinguished authorities. The entire work was edited by a board of 12 men, headed by Dr. Sandweiss.

Extensive discussions of the embryology, anatomy, and physiology of the upper gastro-intestinal tract are followed by critical reviews of the various theories of etiology and pathogenesis of peptic ulcer. Medical and surgical treatment are separately discussed in great detail by several authors. Special consideration is given to the problem of peptic ulcer in the very young patient and in the aged; complications of peptic ulcer and their management are dealt with in great detail.

Numerous charts, reproductions of x-ray films and schematic drawings illustrate the eight sections of the book which is further divided into 64 chapters. As a source book with complete references it can be recommended to the student, the teacher, the author, and the practitioner. It is easily the most complete and authoritative treatise available on the subject.—*M.S.A.*

* * *

An Atlas of Normal Radiographic Anatomy. By Isadore Meschan. Published by W. B. Saunders Company, Philadelphia. 593 pages, 1044 illustrations. Price $15.

This atlas is intended as a reference for general practitioners, as a book for radiology students, and for the use of topographical anatomists. It differs from x-ray manuals on technique in the respect that more detailed descriptions of normal anatomy replace specific discussions of exposure factors.

The illustrations are excellent. The diagrams are good illustrating methods of positioning patients for x-ray views. Representative x-ray films made in those positions are well reproduced as negative prints, and the labelled tracings made from these films are helpful. The anatomical cuts largely are borrowed from standard textbooks of human anatomy.

The book is arranged by body systems, and the material on the skeletal system is further arranged by body regions. Descriptions of bones make up a little over half of the book.

The book will be a desirable addition to the doctor's library shelf.—*R.W.*

Psychosomatic Gynecology: Including Problems of Obstetrical Care. By William S. Kroger and S. Charles Freed. Published by W. B. Saunders Company, Philadelphia. 503 pages. Price $8.00.

The text has been divided into four parts: the psychosomatic aspects of fetus and infant, the psychosomatic aspects of neuroendocrinology and the common psychosomatic problems. A fifth portion of the book discusses and describes the methods of diagnosis and treatment from the psychosomatic viewpoint.

Psychosomatic Gynecology is a book which undoubtedly has a place in the obstetrician's, gynecologist's and general practitioner's library. Both the organic and psychosomatic disorders are discussed and as nearly as possible correlated. The hitherto all too frequently neglected or ignored psychic aspects of women's fears, ignorance and misinformation with the resultant expression of these by means of functional or organic disorders is well presented. Some of the ideas presented are not totally acceptable, and the book tends of necessity to be repetitious; however, the book is well worth reading and is a step toward the correction of deep-seated emotional problems complicating obstetrics and gynecology. It has been written primarily for the practicing gynecologist or obstetrician, rather than for the psychiatrist, and should be very useful as well as practical to the physician.—*R.S.*

* * *

Technical Methods for the Technician. Fourth Edition. By Anson Lee Brown. Published by Anson L. Brown, Inc., Columbus, Ohio. 784 pages. Price $10.

This is the fourth edition of a book which is published by the author. As he states in the preface, it is written with the beginning student in mind and he hopes that it is received in the same light. The reviewer feels as though this is a book for a beginning technician and not one for the graduate. It is written more in the style of a laboratory manual, rather than as a book on technical methods.—*S.J.W.*

* * *

Statistics for Medical Students and Investigators in the Clinical and Biological Sciences. By Frederick J. Moore, Frank B. Cramer and Robert G. Knowles. Published by the Blakiston Company, Philadelphia. 113 pages, 11 figures, 16 tables. Price $3.25.

The approach is as palatable as it could be to one uninitiated in this field; difficulties in presenting such subject matter are hinged upon lack of background upon the part of the reader on one hand, and upon his lack of sustained interest on the other. Were this latter not the case, there would be more persons familiar with the terminology and with strong mathematical background. Therefore, such

THE
MEDICAL PROTECTIVE
COMPANY
FORT WAYNE, INDIANA

Professional Protection
Exclusively
since 1899

TOPEKA Office:
J. E. McCurdy, Rep.,
1035 Randolph Avenue,
Telephone 2-3027

THE BROWN SCHOOL

Four distinct units. Tiny Tots through the Teens. Ranch for older boys. Special attention given to educational and emotional difficulties. Speech, Music, Arts and Crafts. A staff of 12 teachers. Full time Psychologist. Under the daily supervision of a Certified Psychiatrist. Registered Nurses. Private swimming pool, fireproof building. View book. Approved by State Division of Special Education.

BERT P. BROWN, DIRECTOR
PAUL L. WHITE, M.D., F.A.P.A.,
MEDICAL DIRECTOR
P. O. Box 4008, Austin, Texas

A BIG TIME-SAVER FOR EVERY DOCTOR

This handy booklet for new mothers was "built to doctors' orders". It contains blank forms for filling in your instructions and formulas.

It provides a permanent case-history record. A memo will bring you a sample...or as many as you want for your daily practice... without obligation.

Many doctors are prescribing "Daricraft Homogenized Evaporated Milk". It is always uniform, safe, sterilized, easy to digest, and high in food value and minerals. Daricraft contains 400 U. S. P. units of Vitamin D per pint.

PRODUCERS CREAMERY CO., SPRINGFIELD, MO.

authors are at the disadvantage of presenting subject matter in a veritable foreign tongue.

The "Design of Experiments and Presentation of Results" which is well covered in a lucid fashion is most worthy of consideration of students of medical sciences at all levels of training and career. This book is the type requisite to research especially, but it is of great merit to those who may be intellectually curious and only try to better appreciate investigative work. This is particularly important in medicine and biological sciences.

To quote from the final summary one may gain insight into the presentation and philosophy of these authors, and such a passage follows: "Research is conducted essentially for the purpose of self-education and is supported because of its potential educational value for others, with all the secondary benefits which may come from increased knowledge and understanding . . . The subject of statistics should be considered as a basic science of investigation whether . . . concerned with . . . lipotropic influence of a chemical, the therapeutic value of penicillin, or the effect of potassium on the T wave."—*T.R.H.*

Committee on Physical Medicine Disbands

The Baruch Committee on Physical Medicine and Rehabilitation announced recently that it had achieved its goals and was discontinuing its activities. At the same time Mr. Bernard M. Baruch, New York, the sponsor of the group, which has been active since 1943, announced that he was watching the institutions to which he had made grants and that it was his object to make further grants "to those who undertake the work with enthusiasm and beneficial results."

The committee had been formed by Mr. Baruch to develop and advance the special field of medicine devoted to the diagnosis and treatment of disease by physical agents and to the rehabilitation of disabled persons. Mr. Baruch has provided well over $2,000,000 of his personal fortune to support this branch of healing in honor of his father, the late Dr. Simon Baruch, who was the leading medical pioneer in this field.

In announcing achievement of its goals, the committee mentioned the following activities in which it had participated:

1. A marked increase in the teaching of physical medicine and rehabilitation in the medical schools of America.

2. An extensive increase in the number of residencies in physical medicine and rehabilitation.

3. The rehabilitation of many thousands of wounded soldiers and sailors as well as still greater numbers of persons injured in civilian life.

4. Complete recognition of the new medical specialty of physical medicine and rehabilitation.

5. The establishment of a new Section on Physical Medicine and Rehabilitation in the American Medical Association.

6. The organization of an American Board of Physical Medicine and Rehabilitation to certify qualified specialists in this field.

7. Stimulation of the establishment of community rehabilitation centers throughout the country.

8. Clarification of the standards for determination of the physical fitness of the workers of the nation.

9. Improvements in the teaching of medical physics.

Make hotel reservations now for the 92nd annual session of the Kansas Medical Society, Kansas City, Kansas, April 27-May 1, 1952. Write the Town House, Kansas City, Kansas.

CLASSIFIED ADVERTISEMENTS

FOR SALE—Complete Picker Century 100 ma., 100 kvp x-ray unit, 1948 model, excellent condition, with airflow diagnostic, fluoroscopic and superficial therapeutic tube, fluoroscopic screen, cones, protective lead stand, gloves, apron, goggles, wall cassette holder, foot rest, cassettes (2—14 x 17, 2—10 x 12, 3—8 x 10) with screens, film hangers, and roll of sheet lead. Immediate delivery F.O.B. North Little Rock. Uncrated shipping weight 1500 pounds. $3,500. Write the Journal 10-51.

WANTED—X-ray and laboratory technician. Prefer woman who can do both. Write the Journal 11-51 for conference.

FOR SALE—Well equipped office in central Kansas town of 12,000. Write the Journal 12-51.

WANTED—16" x 24" gas or electric autoclave, with or without instrument and water sterilization attachments. Write the Journal 13-51.

FOR SALE OR TRADE—Will sacrifice direct tracing electrocardiograph in perfect condition, Cardiotron, Model PC 1A, portable, walnut case, not a scratch on it. Standard leads. Reason for disposing: doing mostly eye work and have access to EKG services. Write the Journal 14-51.

GOOD LOCATION for a doctor, town 30 miles from Topeka. Office available. Instruments and all office equipment for sale, including good x-ray. Write the Journal 15-51.

Merck & Mallinckrodt ® Reagents
KLINE TEST ANTIGEN (LAMOTTE)
PYREX LABORATORY GLASS WARE
PIPETTES AND BURETTES
PRECISION EQUIPMENT
HARTMAN-LEDDON SPECIALTIES
LABORATORY SUPPLIES & EQUIPMENT
KANSAS OWNED
Southwest Scientific Corporation
122 S. St. Francis Wichita 2, Kansas

The Neurological Hospital, 2625 West Paseo, Kansas City, Missouri, a voluntary hospital providing the care and treatment of nervous and mental patients, and associate conditions.

Nationally advertised Surgical Supplies and Equipment have been placed at Topeka, Joplin, Kansas City and St. Joseph for your convenience by—

GOETZE NIEMER CO.

Management by Dr. W. F. Goetze, a member of the American Medical Association, assures intelligent servicing of your orders.

TROWBRIDGE TRAINING SCHOOL
Established 1917

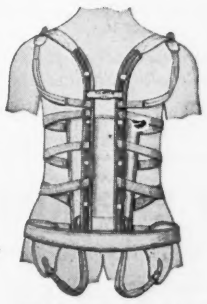
For unusual children. Medical and psychiatric supervision. Experienced teachers. Individual special training. Home atmosphere. Enrollment limited. Approved and registered by the Council of Medical Education and Hospitals of the A.M.A. Pamphlet.

E. H. TROWBRIDGE, SR., M.D.
1905 BRYANT BUILDING KANSAS CITY 6, MO.

Deformity Appliances of Quality

Orthopedic and Surgical Appliances
Artificial Limbs

Trusses
Abdominal Supports
Elastic Hosiery
Foot Supports
Surgical Corsets



Taylor Back Brace
Made to Order In Our Own Factory

P. W. HANICKE MFG. CO.
1009 McGee St. Victor 4750
KANSAS CITY, MO.

Cook County Graduate School of Medicine
ANNOUNCES CONTINUOUS COURSES

SURGERY—Intensive Course in Surgical Technic, Two Weeks, starting January 21, February 4, February 18.
Surgical Technic, Surgical Anatomy & Clinical Surgery, Four weeks starting March 3, June 2.
Surgical Anatomy & Clinical Surgery, Two Weeks, starting March 17, June 16.
Surgery of Colon & Rectum, One Week, starting March 3, April 7.
Gallbladder Surgery, Ten Hours, starting April 21.
Basic Principles in General Surgery, Two Weeks, starting December 10, March 31.
Breast & Thyroid Surgery, One Week, starting June 23.
Thoracic Surgery, One Week, starting June 2.
Esophageal Surgery, One Week, starting June 23.
GYNECOLOGY—Intensive Course, Two Weeks, starting February 18, March 17.
Vaginal Approach to Pelvic Surgery, One Week, starting March 3, March 31.
OBSTETRICS—Intensive Course, Two Weeks, starting March 3, March 31.
MEDICINE—Intensive General Course, Two Weeks, May 5.
Electrocardiography & Heart Disease, Two Weeks, starting March 17.
Gastroenterology, Two Weeks, starting May 19.
Hematology, One Week, starting June 16.
UROLOGY—Intensive Course, Two Weeks, starting April 28.
Ten Day Practical Course in Cystoscopy starting January 7, January 21, and every two weeks.
ROENTGENOLOGY—Two Week Lecture and Clinical Courses each month.

GENERAL, INTENSIVE AND SPECIAL COURSES IN ALL BRANCHES OF MEDICINE, SURGERY AND THE SPECIALTIES
TEACHING FACULTY—ATTENDING STAFF OF COOK COUNTY HOSPITAL
Address: Registrar, 427 S. Honore St., Chicago 12, Ill.

RADIUM & RADIUM D & E

(including Radium Applicators)

FOR ALL MEDICAL PURPOSES

Est. 1919

Quincy X-Ray & Radium Laboratories

(Owned and Directed by a Physician-Radiologist)

Harold Swanberg, B.S., M.D., *Director*

W.C.U. Bldg. Quincy, Illinois

ACCIDENT • HOSPITAL • SICKNESS

INSURANCE

FOR PHYSICIANS, SURGEONS, DENTISTS EXCLUSIVELY

ALL PREMIUMS COME FROM — PHYSICIANS SURGEONS DENTISTS — ALL CLAIMS GO TO

$5,000 accidental death	$8.00
$25.00 weekly indemnity, accident and sickness	Quarterly
$10,000.00 accidental death	$16.00
$50.00 weekly indemnity, accident and sickness	Quarterly
$15,000.00 accidental death	$24.00
$75.00 weekly indemnity, accident and sickness	Quarterly
$20,000.00 accidental death	$32.00
$100.00 weekly indemnity, accident and sickness	Quarterly

COST HAS NEVER EXCEEDED AMOUNTS SHOWN.
ALSO HOSPITAL POLICIES FOR MEMBERS' WIVES AND CHILDREN AT SMALL ADDITIONAL COST

85c out of each $1.00 gross income used for members' benefits

$4,000,000.00 Invested Assets — $17,000,000.00 Paid for Claims

$200,000.00 deposited with State of Nebraska for protection of our members

Disability need not be incurred in line of duty—benefits from the beginning day of disability

PHYSICIANS CASUALTY ASSOCIATION
PHYSICIANS HEALTH ASSOCIATION
49 years under the same management
400 FIRST NATIONAL BANK BLDG., OMAHA 2, NEBRASKA

Index to Advertisers

Abbott Laboratories VI
Ayerst, McKenna and Harrison, Ltd., Inside back cover
Brown School 625
Camp, S. H., and Company IX
Chicago Medical Society 623
Coca-Cola Company 621
Cook County Graduate School of Medicine 627
Duncan Laboratories 611
Goetze Niemer Company 627
Hanicke, P. W., Manufacturing Company 627
Isle, W. E., Company 626
Kansas Oxygen Division XVIII
Lattimore-Fink Laboratories 621
Lederle Laboratories, Inc. 613
Lilly, Eli, and Company ..... Facing XVIII
Major Clinic XVIII
Mead Johnson and Company ..... Back cover
Medical Protective Company 625
Merck and Company, Inc. XI
Neurological Hospital Association 627
Page Milk Company XVII
Parke, Davis and Company. Inside front cover and III
Pfizer, Charles, and Company, Inc. ..... X and 619
Physicians Casualty Association 628
Producers Creamery Company 625
Quincy X-ray and Radium Laboratories 628
Quinton-Duffens Optical Company XVI
Ralph Sanitarium XII
Reading and Smith Service Bureau 628
Schering Corporation XIII
Schmid, Julius, Inc. XV
Searle, G. D., and Company 609
Southwest Scientific Corporation 627
Squibb, E. R., and Sons VIII
Trowbridge Training School 627
University of Kansas Medical Center XVI
Upjohn Company VII
Wander Company 615
Winthrop-Stearns, Inc. 617
Woodcroft Hospital 623
Wyeth, Inc. V

OVER 31 YEARS OF EXPERIENCE

COLLECTING DORMANT ACCOUNTS FOR HOSPITALS AND PHYSICIANS

ALL FUNDS PAID DIRECT TO OUR CLIENT

We prepare and keep all the records—furnish the supplies—do all detail work—pay part of routine postage. The plan is successful and altogether different from anyother. Efficient organization and field men.

READING & SMITH SERVICE BUREAU

1004 Commerce Trust Bldg. Kansas City, 6, Mo.

"In general, symptomatic improvement [of menopausal symptoms] was striking within 7 to 14 days after treatment..." with "Premarin."

Gray, L.: J. Clin. Endocrinol. 3:92 (Feb.) 1943.

Many clinicians have found that "Premarin" therapy usually brings about prompt relief of distressing menopausal symptoms. Furthermore, symptomatic improvement is followed by a gratifying sense of well-being in a majority of cases. This is the "plus" in "Premarin" therapy which tends to quickly restore the patient's normal mental outlook.

Four potencies of "Premarin" permit flexibility of dosage: 2.5 mg., 1.25 mg., 0.625 mg., and 0.3 mg. tablets; also in liquid form, 0.625 mg. in each 4 cc. (1 teaspoonful).

DATE DUE

SAMPLE COPY

State House,
Topeka, Kansas

Cow's milk traditionally supplies protein needed for the infant's growth and development. But to "spare" all this protein for its essential tissue-building functions, generous amounts of carbohydrate are needed—more than are provided by the milk alone.

To supply the classic caloric distribution of 15% protein, 35% fat and 50% carbohydrate, approximately 5% carbohydrate must be added to a typical milk-and-water mixture. This may be roughly calculated as 1 tablespoon Dextri-Maltose® to each 5 ounces of formula.

For forty years, cow's milk and Dextri-Maltose formulas with these approximate proportions have been used with consistent clinical success.

MEAD'S

MEAD JOHNSON & CO.
EVANSVILLE 21, IND., U. S. A.

The Stormont Medical Library
No. 4726
1-18-55
Kansas State Library

The Journal

OF THE

Kansas Medical Society

Published Monthly by

THE KANSAS MEDICAL SOCIETY

INDEX TO VOLUME LII

JANUARY, 1951, TO DECEMBER, 1951, INCLUSIVE

Index to Volume LII

ORIGINAL ARTICLES

Abdominal Distention: Prevention and Treatment with Stigminene Bromide—L. J. Hanis, M.D., and C. D. Kobler, M.D., Kansas City, Kansas 5-216

Abstract on New Growths of the Skin and Their Management, An—Charles C. Dennie, M.D., and Donald L. Fuhrman, M.D., Kansas City, Missouri 9-425

Acute Anesthetic Emergencies—Paul H. Lorhan, M.D., and E. Metz Wright, Jr., M.D., Kansas City, Kansas 9-421

Appendicitis: A Review of 579 Cases—Darrel L. Evans, M.D., Manhattan, Kansas 11-535

Bone Marrow Biopsy as an Aid in the Diagnosis of Metastatic Malignancy—William R. Durkee, M.D., Manhattan, Kansas, and Sloan J. Wilson, M.D., Kansas City, Kansas 8-361

Bronchial Asthma from a Therapeutic Point of View—John K. Fulton, M.D., Wichita, Kansas 7-313

Carcinoma Developing in Jejunal Ulceration Following Gastroenterostomy for Peptic Ulcer: A Case Report—Wendell A. Grosjean, M.D., and James M. Davis, M.D., Winfield, Kansas 6-257

Cardiac Arrest with Successful Resuscitation—Jack Tiller, M.D., Wichita, Kansas 10-480

Care of Hand Injuries, The—Committee on Trauma, American College of Surgeons 1-11

Cerebrovascular Accident, The: A Review of Some Pathological and Clinical Problems—A. Theodore Steegmann, M.D., Kansas City, Kansas 10-473

Clinical Report on the Relief of Headaches Non-Responsive to Analgesics, A—Charles K. Shofstall, M.D., and William H. Shofstall, M.D., Kansas City, Kansas 8-366

Congenital Toxoplasmosis: A Case in Kansas—Frances Ann Allen, M.D., Newton, Kansas 12-577

Diagnosis and Treatment of Subdural Hematomas in Infants —John R. Patterson, M.D., Kansas City, Kansas 5-218

Diverticulitis of the Sigmoid as a Surgical Problem—Edward S. Brinton, M.D., Wichita, Kansas 10-482

Effects of ACTH on Liver Function—Robert E. Bolinger, M.D., and Mahlon H. Delp, M.D., Kansas City, Kansas .. 3-99

Encephalitis in the Midwest: A Review of the Problem—T. Aidan Cockburn, M.D., Edmund R. Price, D.V.M., and John A. Rowe, Ph.D., Kansas City, Kansas 7-316

Further Studies of the Geography of Histoplasmin Sensitivity in Kansas and Missouri—Michael L. Furcolow, M.D., Kansas City, Kansas, and Jay Sitterley, M.D., Topeka, Kansas 12-584

Glomus Jugulare Tumor—David M. Gibson, M.D., and G. O'Neil Proud, M.D., Kansas City, Kansas 12-581

Handling of Casualties, The—Col. William L. Wilson, M.C., U.S.A., Washington, D. C. 7-319

Infantile Cortical Hyperostoses—John F. Bowser, M.D., Kansas City, Kansas 5-209

Inhibition by Antihistaminic Compounds of Growth of Pathogenic Fungi: The Effects of Chlor-trimeton Maleate in Vitro—Jeannette S. Carter, Ph.D., and Richard L. Sutton, Jr., M.D., Kansas City, Kansas 3-119

Intestinal Obstruction: Report of Two Unusual Cases—H. S. O'Donnell, M.D., Ellsworth, Kansas, and R. E. Bula, M.D., Lyons, Kansas 1-5

Intracranial Aneurysms—James Hibbard, M.D., Ralph L. Drake, M.D., and Larry E. Vin Zant, M.D., Wichita, Kansas 5-213

Office Gynecology—John H. Moore, M.D., Grand Forks, North Dakota 8-368

Personalized Pre-Partum Care—John H. Moore, M.D., Grand Forks, North Dakota 9-430

Primary Tumors of the Bladder: A Survey of 275 Cases—John W. Warren, Jr., M.D., Wichita, Kansas 2-59

Problem of Success and Failure in the School Age Child, The—Rodger A. Moon, M.D., Emporia, Kansas 2-45

Problems in Treatment of Juvenile Delinquency at the Kansas Boys Industrial School—Ralph W. Coltharp, M.D., and George H. Weber, M.A., Topeka, Kansas 1-7

Prolapsing Redundant Gastric Mucosa—Galen M. Tice, M.D., and Thomas G. Orr, M.D., Kansas City, Kansas ... 3-110

Psychosomatic Problems of the Involutional Period—Allen J. Enelow, M.D., Topeka, Kansas 10-486

Rapid Rehabilitation of Disabilities of the Knee—Donald L. Rose, M.D., Kansas City, Kansas, and Lilyan G. Warner, M.A., Lawrence, Kansas 2-49

Re-Evaluation of the Surgical Treatment for Duodenal Ulcer as Based on Experimental and Clinical Observations, A—Stanley R. Friesen, M.D., Kansas City, Kansas 3-114

Rehabilitation of the Quadriceps—Committee on Trauma, American College of Surgeons 9-434

Reversible Cerebral Atrophy—William P. Williamson, M.D., and Calvert J. Winter, M.D., Kansas City, Kansas 3-107

Roentgenographic Study of Edentulous Jaws, A—Ralph W. Edwards, D.D.S., Kansas City, Kansas 6-267

Role of Thyroid Feedings in Prgenancy, The—Lucien R. Kyle, M.D., Topeka, Kansas 12-589

Surgical Treatment of Extensive Skin Cancer of the Lower Eyelid, The—Creighton A. Hardin, M.D., and David W. Robinson, M.D., Kansas City, Kansas 6-260

Surital Sodium: I. Clinical Use—Paul H. Lorhan, M.D., Gretchen Guernsey, M.D., and Marguerite M. Devine, M.D., Kansas City, Kansas 11-525

Surital Sodium: II. Comparison with Pentothal Sodium—Paul H. Lorhan, M.D., and Marguerite M. Devine, M.D.. 11-528

Temporal Arteritis: Report of a Case with ACTH Therapy —Wendell M. Tate, M.D., Peabody, Kansas, and James A. Wheeler, M.D., Newton, Kansas 8-374

Treatment of an Attack of Bronchial Asthma, The—Ethan Allan Brown, M.D., Boston, Massachusetts 11-529

Treatment of Congestive Failure, The—E. Grey Dimond, M.D., Kansas City, Kansas 3-120

Trochanteric Fractures of the Femur: Experiences at the University of Kansas Medical Center with a Group of 45 Cases Treated by Non-operative Methods during the Past Five Years—Edward T. Haslam, M.D., and W. David Francisco, M.D., Kansas City, Kansas 3-93

Urology and Internal Medicine—Herman L. Kretschmer, M.D., Chicago, Illinois 7-325

Use of ACTH in Glomerular Nephritis—Andrew D. Mitchell, M.D., and William L. Valk, M.D., Kansas City, Kansas 1-1

Use of the Laboratory in the Diagnosis of Liver Disease, The—Thomas J. Rankin, M.D., Wichita, Kansas 2-53

Uses of Radioactive Gold Colloid in Therapy and Palliation of Neoplastic Disease—William N. Harsha, M.D., Kansas City, Kansas 6-263

CANCER SUPPLEMENT, SEPTEMBER, 1951

Alleviation of Cancer Pain—Eldridge H. Campbell, Jr., M.D., and Robert D. Whitfield, M.D., Albany, New York 71-A

Cancer and Allied Diseases in Children—Harold W. Dargeon, M.D., New York, New York 10-A

Carcinoma of the Breast—Everett D. Sugarbaker, M.D., Jefferson City, Missouri 23-A

Congenital Defects and Associated Neoplastic Disorders in Children—Harold W. Dargeon, M.D., New York, New York 21-A

Diagnosis of Accessible Cancer, The—Danely P. Slaughter, M.D., Chicago, Illinois 35-A

General Pathology of Endocrine Tumors, The—Howard T. Karsner, M.D., Washington, D. C. 45-A

Recent Advances in Cancer Therapy—Danely P. Slaughter, M.D., Chicago, Illinois 64-A

Relation of Pregnancy to Malignancy, The—Daniel G. Morton, M.D., Los Angeles, California 57-A

Surgical Treatment of Advanced Cancer—Everett D. Sugarbaker, M.D., Jefferson City, Missouri 14-A

Surgical Treatment of Cervical Cancer, The—Daniel G. Morton, M.D., Los Angeles, California 5-A

Therapy with Radioactive Isotopes—John H. Lawrence, M.D., Berkeley, California 7-A

Tracer Research and Cancer—John H. Lawrence, M.D., Berkeley, California 31-A

Treatment of Cancer of the Face, Mouth and Neck with Irradiation—Charles L. Martin, M.D., Dallas, Texas 59-A

Treatment of Cancers of the Anus and Rectum—George T. Pack, M.D., New York, New York 48-A

Tumors of the Spine and Spinal Cord with a Discussion of the Diagnostic Significance of Back Pain—Eldridge H. Campbell, Jr., M.D., and Robert D. Whitfield, M.D., Albany, New York 40-A

Index to Volume LII

EDITORIALS

American Medical Association Dues 5-228
American Medical Education Foundation 12-600
Another E.M.I.C. 6-270
Beelman, Dr., Leaves Kansas 6-269
Biology of Ageing 7-331
Croson, Dr., Memorial 12-599
Distribution of Physicians 11-544
Doctors, Duty, and Dedication 3-123
Don't Give Your Life for Christmas 12-601
Dues for 1952 12-599
Editor Views Medicine, An 8-381
Eye Testing for School Children 11-543
Fable, A 11-543
Federal Grants to Kansas 5-228
Federal Health Legislation 7-332
Federated Fund Raising 8-381
Improving Physician-Patient Relationship 12-602
Indigent Health Care 9-439
Indigent Medical Care 5-227
Kansas State Board of Health, The 5-227
Medical Aptitude 6-270
Medical Education Foundation 9-441
Medical History of Sedgwick County 2-66
Medical Journalism 7-333
Medicine in the V. A. 6-269
1951 8-381
Perhaps—But We Can't Believe It 2-65
Physicians' Incomes 9-440
Price of Public Relations, The 7-331
Process of Evolution 3-123
Research at K. U. Medical Center 11-545
Resolution on Socialized Medicine 8-379
Socialized Medicine in Scotland 10-491
Socialized Medicine Is No Bargain 1-16
Suicide 3-124
Syphilis Therapy 1-16
There Was a Man 8-379
Traffic Safety 10-491
V. A. Changes Medical Director 2-65
What Is Federal Aid? 10-492
Where? Oh Where? 2-65
You May Not Agree—But 1-15

DEATH NOTICES

Armstrong, Dr. Carroll Dunham 8-393
Axtell, Dr. Lucena Chase 6-294
Bagby, Dr. Harold James 8-393
Bressler, Dr. Alexander Hodge 10-502
Burnett, Dr. James Robinet 5-244
Butler, Dr. William Lucas 6-294
Carter, Dr. Jonathan Basil 3-138
Corbett, Dr. Oliver John 9-458
Croson, Dr. Franklin Roy 12-604
Hamill, Dr. Claude Emett 5-244
Hay, Dr. Gilbert Wilson 5-244
Henderson, Dr. Edward Emmett 12-604
Hibbard, Dr. Samuel M. 5-244
Koons, Dr. Franklin Walter 5-244
Manning, Dr. Harris W. 10-502
Missildine, Dr. John Gurley 3-138
Morrison, Dr. Hector 7-336
Myers, Dr. Samuel Monteith 9-458
Newman, Dr. John Ross 2-72
Olson, Dr. Andrew Allen 6-294
Patrick, Dr. Fred Edward, Jr. 6-294
Pearson, Dr. Walter J. 7-336
Reichley, Dr. Elmer J. 1-32
Rich, Dr. William Tilton 10-502
Stevenson, Dr. Onnie Earle 12-604
Thomas, Dr. Charles Alfred 10-502
Thompson, Dr. Solomon Henry 1-32
Torrance, Dr. Fred Emerson 1-32
Wilmoth, Dr. William Law 7-336
Woods, Dr. Samuel Delos E. 5-244
Yates, Dr. Charles E. 8-393
Zugg, Dr. Clarence Logan 5-244

MISCELLANEOUS

Abstracts from Current Literature 1-40; 2-86; 3-150; 5-252; 6-304; 7-356; 8-416; 9-468; 10-522; 11-572; 12-620
Accidental Death Rate High 3-148
Accuracy in Laboratory Diagnosis 10-494
Acthar Council Accepted 8-414
Acting Dean Appointed 9-441
Activities of Members 1-32; 2-69; 3-140; 5-238; 6-292; 7-350; 8-392; 9-446; 10-502; 11-549; 12-602
Aid to Medical Education 2-67
American Board Examinations 1-40; 2-87; 3-147; 5-254; 6-310; 7-360; 8-417; 9-465; 11-571; 12-
A.M.A. Atlantic City Convention, The 8-408
A.M.A. Meeting 7-333
A.M.A. Meeting in Los Angeles 6-298
Announcements 1-36; 2-82; 3-146; 5-248; 6-298; 8-412; 9-462; 10-520; 11-570; 12-622
Annual Banquet 4-164
Annual Registration Fees Due 7-333
Army Develops Casualty Bag 12-618
Atlas of Pathology Published 1-17
Atomic Energy Commission Award 7-346
Award to American Optical Company 1-28
Blue Shield 1-18; 2-68; 3-136; 5-225; 6-279; 7-346; 8-385; 9-437; 10-500; 11-541; 12-597
Book Reviews 1-38; 2-84; 3-154; 5-250; 6-300; 7-354; 8-414; 9-464; 10-518; 11-568; 12-624
Cancer Conference in Wichita 2-72
Cancer Grant to K. U. 11-545
Cancer Terminology Standardized 9-458
Career Investigator Appointed 8-418
Case Reports from the University of Kansas Medical Center 1-20; 2-74; 3-126; 5-231; 6-280; 7-334; 8-386; 9-442; 10-495; 11-546; 12-605
Church Refutes Publicity 9-462
Clinical Conference in Kansas City 8-384
Club of "Guinea Pigs" Formed 11-545
Color TV at Medical Center 12-610
Committee Chairmen 4-173
Committee on Physical Medicine Disbands 12-626
Committee Reports 4-186
Committees for 1951-1952 6-290
Conference on Heart Disease 10-494
Correction 12-604
Councilor Reports 4-182
County Societies 1-30; 2-70; 3-144; 5-246; 6-296; 7-348; 11-552; 12-618
Discuss Field Medical Equipment 3-136
Evaluation of Army Medical Items 6-308
Expanded Blood Program 1-28
Eye, Ear, Nose and Throat Section 4-174
Fifth Medical School Issue 3-134
Flood Damaged Drugs Replaced 10-520
Forced Feeding Speeds Healing of Burns 5-225
Frozen Juice Meets Approval 10-522
General Practitioners Plan Meeting 2-90
Golden Belt Society Meets 8-414
Greetings 4-157
Guest Speakers 4-158
Kansas Licenses to 134 9-466
Kansas Medical Assistants' Society 4-179
Kansas Physicians' Service 4-204
Kansas Press Looks at Medicine, The 1-42; 3-148; 5-246; 7-352; 8-410; 10-504; 12-610
Laboratory Program Announced 11-541
Licenses to 37 Physicians 2-84
Licensure on Individual Basis 1-19

Index to Volume LII

Lilly to Feature Painting Series 12-622
Lilly Products Replaced 8-393
Medical Motion Pictures Available 8-418
Mental Health Grants to Kansas 3-154
New Drug for Use in Surgery 8-412
New Faculty Members Appointed 11-552
New Secretary for Board of Health 9-446
Ninety-second Annual Meeting of K.M.S. 3-138
Ninety-second Annual Session, Kansas Medical Society 6-273
Nominations for Society Offices 3-138
Oklahoma City Clinical Meeting 9-441
Over-all Picture of P.H.S. Grants 5-230
Pediatric Chloromycetin Available 12-622
Plans for 92nd Annual Meeting 2-67
Polio Research Grant 6-279
President 4-181
President-Elect 4-181
President's Page .. 1-14; 2-64; 3-122; 4-180; 5-226; 6-268; 7-330; 8-378; 9-438; 10-490; 11-542; 12-598
Proposed Change for K.M.A.S. 3-144
Replace Flood Damaged Products 9-462
Round Table Luncheons 4-177
Schedule of Events 4-165
Senior Thesis from the University of Kansas Medical School . 7-337; 8-394; 9-448; 10-506; 11-554; 12-610
Service Notes 1-13; 2-80
Socialized Medicine 1-18; 5-229; 6-271; 7-348; 8-383; 9-460; 10-493; 11-541
State Hospital Out-Patient Department 10-520
Student American Medical Association 2-88
Student Journal to be Published 11-545
Study of Hormones in Psychoses 6-308
Study on Typhoid Inoculation 10-494
Substitute for Morphine 2-72
Supreme Court Decision 5-236
Symposium on Weight Problems 12-622
Technical Exhibits 4-173
Three Grants to K. U. 10-522
Topeka Society of Internal Medicine 12-604
To Study Effects of Radiation 10-499
Trade Name for ACTH 1-13
Underwriters' View of Heart Risks 6-302
Vital Statistics on Children 12-610
Vitamin Corporation Buys Chemical Company 8-418
Vocational Rehabilitation 11-545
Woman's Auxiliary to the Kansas Medical Society 4-178

Fourth Annual

MID-WEST CANCER CONFERENCE

April 3 and 4, 1952 Broadview Hotel, Wichita